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Arizona Medicine

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VOL. 5, No. 4 JULY, 1948

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[1] Stuart, H.C.: Effects of Protein Deficiency on the Pregnant Woman and Fetus and on the Infant and Child, New England J. Med. 236:507 (Apr. 3) 1947.

[2] Zeigler, R.F., Jr.: Pre-eclamptic Toxemia of Pregnancy. North Carolina M. J. 8:655 (Oct.) 1947.

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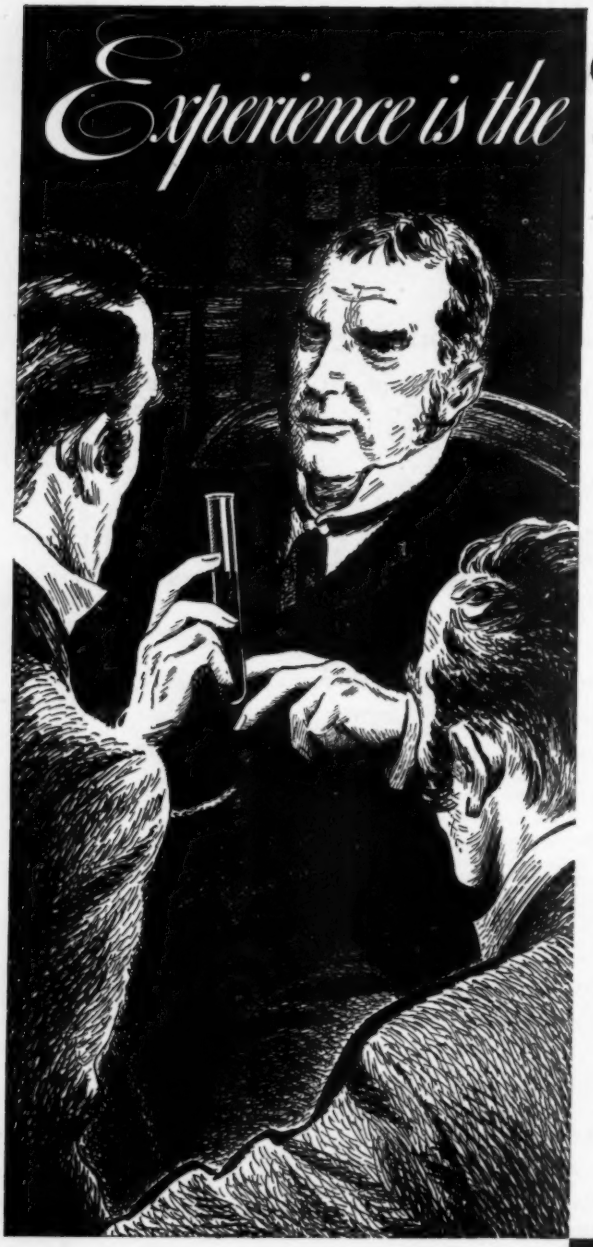
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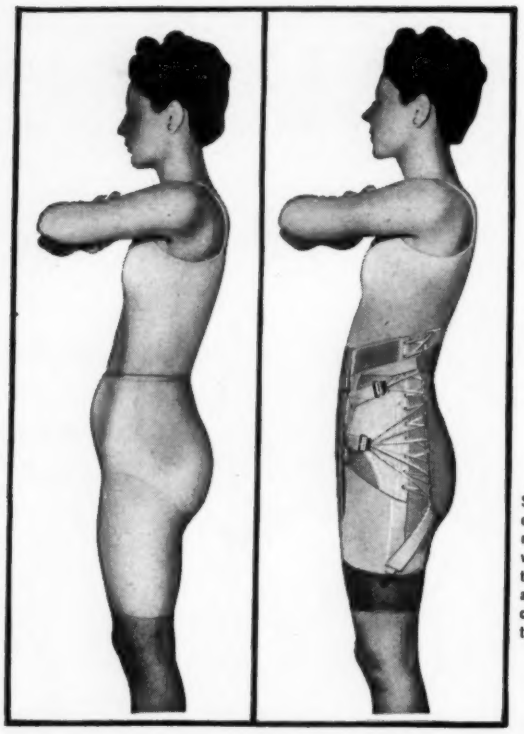
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1. Hoffman, W. S., and Volini, I. F.: Am. J. M. Sc. 213:520 (May) 1947

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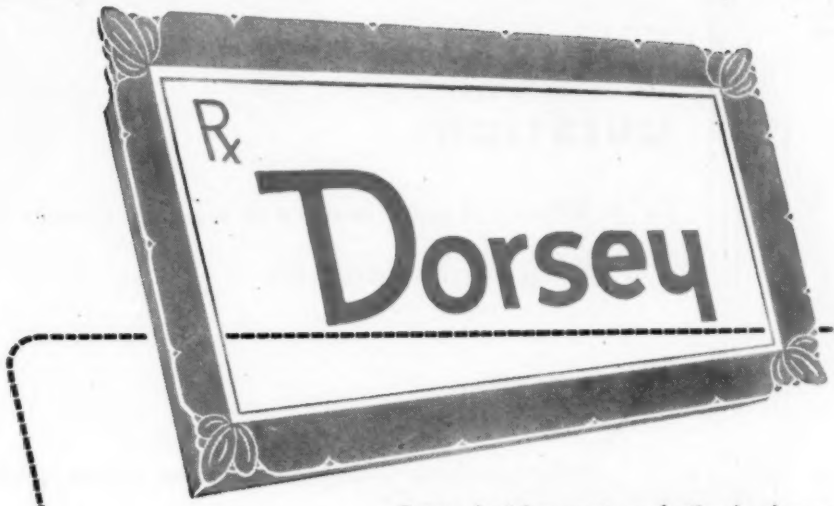
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Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154; Laryngoscope, Jan. 1937, Vol. XLVII, No. 1, 58-60; Proc. Soc. Exp. Biol. and Med., 1934, 32-241; N. Y. State Journ. Med., Vol. 35, 6-1-25, No. 11, 590-592.



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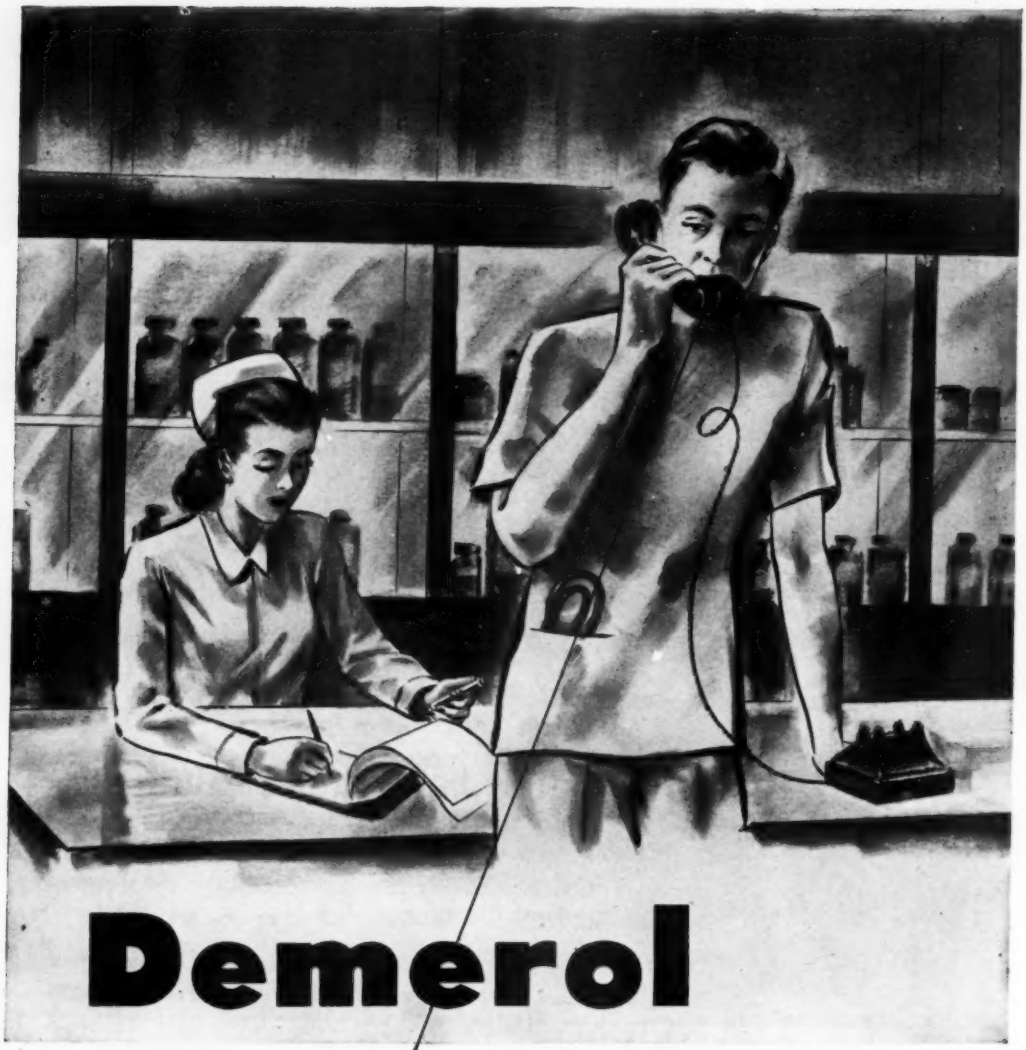
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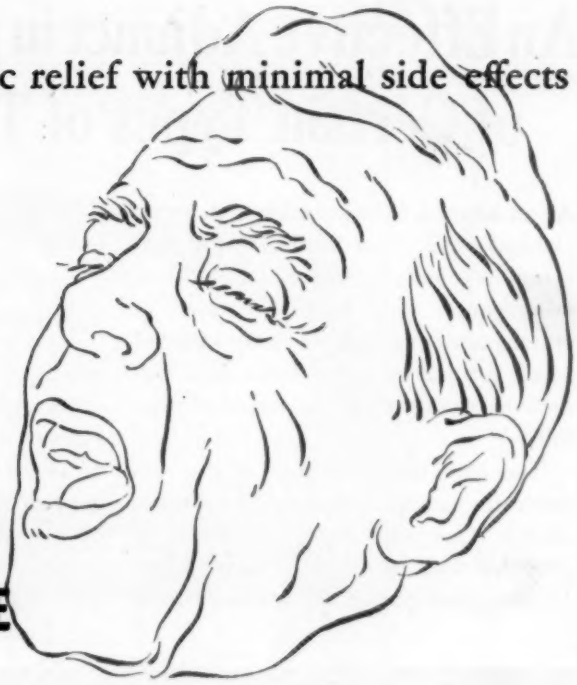
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1. ARBESMAN, C. E.: *N. Y. State Jl. of Med.*, 47: 1775, 1947.
2. LOVELESS, M. H.: *Am. Jl. of Med.*, 3: 296, 1947.
3. BERNSTEIN, ROSE and FEINBERG: *Ill. Med. Jl.*, 92: 2, 1947.
4. OSBORNE, JORDON and RAUSCH: *Arch. of Derm. & Syph.*, 55: 318, 1947.

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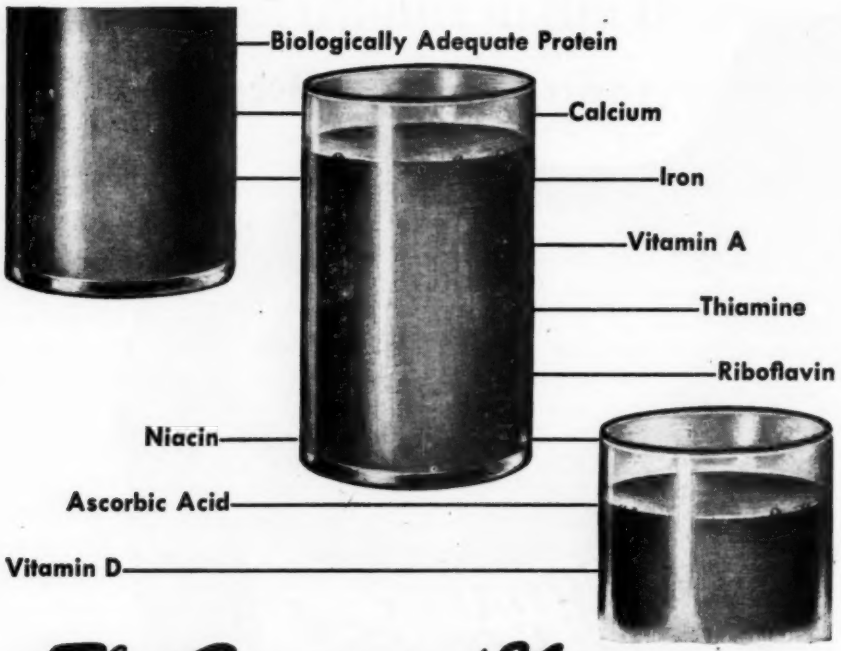


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1. Downing, J. G., Hanson, M. C. and Lamb, M.: Use of 5-Nitro-2-Furaldehyde Semicarbazone in Dermatology, J.A.M.A. *133*:299, 1947 • **2.** Robinson, H. M. and Robinson, H. M., Jr.: The Comparative Values of Some New Drugs in the Pyodermas, South. M. J. *40*:409, 1947 • **3.** Miller, J., Rodriquez, J. and Domonkos, A.: Evaluation of Penicillin in Topical Therapy, New York State J. Med. *47*:2316, 1947 • **4.** McCollough, N. C.: Treatment of Infected War Wounds with a Nitrofuran. Indust. Med. *16*:128, 1947.



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IRON	12.0 mg.	COPPER	0.50 mg.

*Based on average reported values for milk.

to help vanquish depression marked by "morning tiredness"

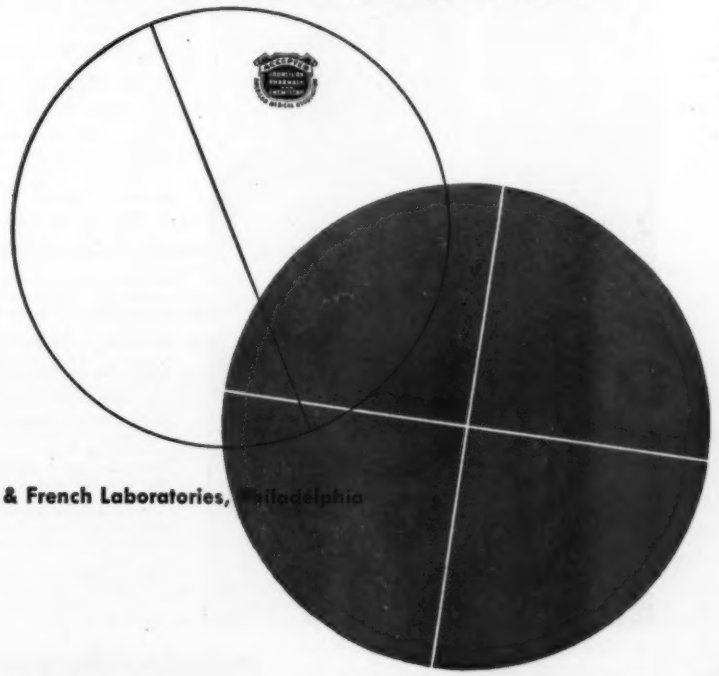
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FOR your own sake, as well as your doctor's it is vitally important to be a "good patient."

Often it is your co-operation with your doctor that makes the difference between an early recovery and a late one, between a minor illness and a serious one.

Here are some of the ways you can help your doctor, and yourself:

1. If you feel sick, call your doctor at once. Don't wait for a serious illness to develop before you ask his help. The sooner he sees you, the more he can do to help you avoid a major illness.

2. Before you telephone your doctor, make a list of the questions you want to ask him. Have a paper and a pencil handy when you call, so that you may take down his instructions. This way you will save your doctor's time, and remember *accurately* what he tells you.

3. Answer your doctor's questions *fully*. A previous illness may not seem to you to have any bearing on your present condition. But to your doctor it might furnish a valuable clue. Tell him complete facts. Let *him* decide what is important.

4. Follow your doctor's instructions *exactly*. If he prescribes medicine, take it *according to directions*. Remember, a larger dose than that prescribed won't cure you faster. And it might be harmful.

5. Never use medicine prescribed for somebody else, or for a previous illness of your own. However similar your symptoms may appear to you, the nature of your illness may be quite different. Only your doctor can accurately diagnose your trouble and prescribe proper treatment.

6. If your doctor advises an operation, don't put it off. With modern surgery, modern hospital care, you seldom have reason to fear an operation.

7. The new medical treatments you read about in the popular press aren't likely to be news to your doctor. If your doctor has not recommended a new treatment to you, it is probably because there are still some questions about its value, some limitations not stressed in popular reports, or some factors in your case which would make the treatment undesirable or ineffective for *you*.

8. Don't ask your doctor to advise you about members of your family whom he himself has not seen. He cannot risk giving an opinion about a patient of whose condition he has no firsthand knowledge.

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"WHAT OF THE FUTURE?"

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Tucson, Arizona

WE are living in troubled times; troubled times nationally, internationally, and medically. We do not know what the future holds, but we must have a part in shaping that future. In a great Democracy such as ours, perpetuation of the principles of freedom and justice must receive its propelling force from the individual citizen, but this propelling force can be effective only with united and concerted action. Medical economy is undergoing and must undergo revolutionary changes to meet the changing times. Direction and leadership in that revolution must and rightfully should come from the Medical profession. No other group of citizens is from insight and experience better qualified to assume that leadership. *Our greatest enemies are lethargy and inaction.* Governments recognize that the health of their people is the foundation upon which their happiness and their powers as States depend. And governments have set about in various ways to see that the health of their people *is* developed and maintained.

It should not be necessary to dwell at length on the paths which medicine is taking or is being forced to take elsewhere in the world. We see the trends daily in our medical journals, our newspapers, our periodicals. Under Communism the physician is the tool of the dictator. He has no voice whatever in the matter of his income, nor in the choice of his patients. Reflect for a moment upon recent developments in the news, consider the inroads into liberties and freedoms that Communism has made. Under Socialism we have examples and samples of reaction in New Zealand where "socialized medicine" is a fact, not a threat. Those who have visited New Zealand, and those New Zealanders who have visited our shores, tell us that neither the doctors nor the patients are happy under the socialistic medical program, that their government recognizes weaknesses, and is already preparing modifications which would return the physician nearer to his former status. In Great Britain we see a tremendous program of medical socialization lumbering up to the starting line. The British doctors cannot stop it. It is LAW! Thousands of the some 56,000 doctors in Britain are strongly opposed to the plan. Some threaten to boycott it. There is a possibility that pressure from the doctors may alter the plan slightly, but it cannot be totally nor radically changed. It is law, ladies and gentlemen!

Some of the highlights of the British plan are as follows:

(1) All payments to doctors are made by the government. (To do so the State collects the necessary reserve through taxes.)

(2) The patient and the doctor have a choice of participating in the plan or not. (It is hardly likely that many will seek paid medical care when so much of earned income is taxed for the support of free medical care.)

(3) Doctors will be paid a base salary of $1200 per annum, plus a fixed ANNUAL rate of $3.03 for each public patient. (Britain's Health Minister estimates that the average doctor could earn $8775 per annum from 2500 public patients. The basic unit for computation is the patient unit, not the office call unit, nor the house call unit.) Any fees from private patients (if the doctor had time to see them) would of course augment the income.

Presidential Address—57th Annual Meeting of the Arizona Medical Association, Phoenix, Arizona, May 20th, 1948.

(4) The doctor will not be allowed to sell his practice, but would receive approximately $5000 compensation for it on retirement or death.

Shall we have g overnment controlled medical care here? It starts there July 5th, 1948!

What is the outlook in these United States? Well, there is the Wagner-Murray-Dingle bill. This bill would impose compulsory health insurance on the people through an agency of the government, and restriet the practice of the private physician. There is the milder Taft bill, which would guarantee hospital care to those who cannot afford doctor bills. No less a personage than President Truman has publicly stated that he favors a national health insurance program. Governor Earl Warren of California, an aspirant to the Republican Presidential Nomination, has recently endorsed compulsory government controlled health insurance. Consider that 132 bills were introduced before the 80th Congress on health and medical practice matters alone. Legislators are taking advantage of the public interest in health, and in some cases are using this interest to further political ends, both good and bad. We have heard opinions expressed that the peak of danger of compulsory health insurance has passed. Let us not be lulled into a sense of false security. Unless we everlastingly strive to keep our house in order, and to offer intelligent, progressive plans for improving the health of all the people of our communities, then the danger will be ever present.

The maintenance of the health of the nation and the care of the sick are social problems of great moment. Government recognizes this fact, and it is now safe to say that most physicians at last agree that good medical care is not available to all, and that all are entitled to it. Social issues are fundamentally moral issues. The responsibility for the solution of the problems presented is ours as organized county and state medical societies. In a government of the people, the people must direct the government, not the government the people if democracy is to endure. Negativistic direction is unavailing. It is useless to attempt to boycott procedures that have already become law. Positive, well-conceived plans of action for the greatest good to all the people must be presented by local medical units to solve local medical problems. Permit me at this point to quote from the "Philosophy of a Medical Service Plan" written for and published in the Journal of American Medical Association by Dr. F. L. Feierabend:

"Many doctors believe that the American Medical Association should provide the solution to this problem. Such an attitude is in keeping with the thinking now exhibited by many citizens. This attitude is best described by the slang expression, 'let George do it.' Regardless of what the problem may be, many persons say, 'What is Congress doing about it? Why don't they pass a law?' Such thinking is false, because in the operation of a democracy it is the responsibility of the citizens that all activity possible begin at the grass roots level. In recognition of this principle the American Medical Association has not been active in the development of actual operating plans. It has developed Associated Medical Care Plans. This organization will be helpful in promoting, guiding, advising and consulting, but will never act in the capacity of actually developing and operating a plan. To support this thinking, I quote from 'Quadragesimo Anno', the great encyclical on the reconstruction of the social order, written in 1931:

" 'It is indeed true, as history clearly proves, that, owing to the change in social conditions, much that was formerly done by small bodies can nowadays be accomplished only by a large corporation. Nonetheless, just as it is wrong to withdraw from the individual and to commit to the community at large what private enterprise and industry can accomplish, so, too, it is an injustice, a grave evil and a disturbance of right order for a large and higher organization to arrogate to itself functions that can be performed efficiently by smaller and lower bodies. This is a fundamental principle of social philosophy, unshaken and unchangeable, and it retains its full truth today. Of its very nature the true aim of all social activity should be to help individual members of the social body, but never to destroy nor absorb them.' "

Assuming that the statement is true, "A government governs best which governs least," what is the prognosis for the future of American Medicine? What plans may be offered?

There will and must be a steady growth of voluntary hospital and medical prepayment plans, and these plans must be supported and inspired by the county and state medical organizations. At the present time there are over 40,000,000 people voluntarily insured for hospitalization, about 17,000,000 for surgical benefits and over 6,000,000 for medical benefits. These figures include those individuals enrolled in voluntary plans, not private insurance company plans. The advantages of the voluntary plan should be obvious to even the most mercenary-minded practitioner. It is a plan in

which organized medicine can participate. The hospital and medical prepayment plans are non-profit, can establish their own policy, are not governed by dividends nor "melon-cutting," and can afford to take certain risks that the private insurance company will never take. From the public relations aspect it can be said that the policy holder in a voluntary plan knows he is not contributing to a gigantic trust, no money making scheme, but to an organization approved and endorsed by the doctors themselves.

The Arizona Medical Association has thrown its force behind the establishment of Blue Shield. The great majority of the practicing doctors of the State have pledged themselves individually to support this initial effort. This fact is highly commendable, but for the sake of strength, unity, and future efforts it would be most desirable to have 100% cooperation of all doctors in Arizona!

Adoption by county or state societies of average fee schedules would be a compelling force in combatting state medicine, and developing and nurturing better public relations. Physicians in deviating from the average schedules, which of course they must be entitled to do, should be business-like in discussing the matter with the patient beforehand and not pass off the subject of fees lightly. Sound practices create a firmer relationship between doctor and patient, between organized medicine and the public.

With increasing frequency we see articles in the press, whether justified or not, concerning the inability of patients to obtain medical attention during the night. It must continue to be the privilege of the physician to decline to make night calls, but that does not assume that the family should do without medical aid in an emergency. Would it not be wise for County Medical Societies to set up a panel of doctors willing to make night calls, make that panel available to a central registry, directory, or county medical office with night help and telephone communication, and then educate the local public concerning this additional medical service?

Closer alliance and interlocking relationships between the county and state medical groups and such organizations as the American Cancer Society and other voluntary health agencies as Tuberculosis, Crippled Children's, Infantile Paralysis, Heart, etc., would check their gradual slipping away from medical control into lay control.

County and state medical organizations have the responsibility of educating the people on matters of health through the media of radio, press, speaker's bureaus, pamphlets, publications, films, school programs and such other means as are at their disposal. *The county medical society is the most important element in the entire structure of organized medicine.* It must unite and inform the individual physicians, educate the public on the problems of medicine, both scientific and economic, and maintain liaison between lay groups and organizations, within the community. Activities of this nature require sacrifices of time and money. We hear remarks that the dues of our county and state medical organizations are too high. It is true that they are at the highest level in the history of the Arizona Medical Association. It is true that the cost of all activities in our lives has reached unprecedented peaks, and it is again true that organized medicine never has been confronted by so great a task as now confronts it. Certainly our dues do not approach the amounts that are required in most instances from members of labor unions.

These and many other things organized practitioners of modern medicine can do, ladies and gentlemen, to further their cause and to fulfill their social and moral obligations to the people of our communities. What is modern medicine? Is any one of us a genius who can rightfully lay claim to his skill in diagnosis and therapy as a personal accomplishment? On the contrary, the knowledge of all physicians is a summation of all that has been true and all that has been false, all that has been effective, and all that has been ineffective in the prevention and treatment of disease through the ages since Hippocrates. The contributions of scholars in research, of country doctors, or professors, of specialists, of general practitioners are all crystallized into what we choose to call the art of modern medicine. Because the health of the people of the nation *is* the basis for the strength and happiness of the State, therefore it is our moral responsibility that our knowledge and our skills are available to all the people. The challenge has been given us. *If we, organized medicine, do not act, then government must and will.*

A strong united front, the abandonment of

negativistic attitudes, the education of the people, and the formulation of positive plans in providing adequate medical care to all, will insure to us and to our children the great heritage of American Medicine and of American Democracy.

PULMONARY RESECTION FOR PULMONARY TUBERCULOSIS

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THE morbidity and mortality of pulmonary tuberculosis are still far in excess of the goals which we expect to attain. Many are convinced that eventually the disease will be completely eradicated. As we approach a period of diminishing returns our efforts and investigations toward this end must be carried on with increasing vigor and persistence. Until a sure and generally applicable method of preventing tuberculosis can be achieved, maximum utilization of the measures now available is obligatory.

Diagnostic and public health measures have long since layed the ground work for the fight against tuberculosis. In the field of therapy the principles of lung collapse have thus far provided the fundamental contributions through which remarkable success has been attained. Collapse therapy, artificial pneumothorax and extrapleural thoracoplasty in particular, has proven itself eminently successful in the treatment of most cases of pulmonary tuberculosis that are not obviously hopeless or terminal when the diagnosis is made. Tuberculosis of the lungs, however, presents an extremely variable pathological picture and experience has shown that there are certain pathological patterns in which collapse therapy is almost sure to fail. Some of these are seen in relatively healthy young individuals for whom an attitude of defeat cannot be accepted. There are other cases in which collapse therapy may control the disease but wherein an excessive loss of pulmonary function, or other serious complications, will result from the treatment itself. To some of these patients pulmonary resection now offers considerable promise of success.

Early attempts to remove tuberculous lung tissue were abandoned because of the extremely discouraging results that obtained. With the improvement in surgical and anesthetic technique that have been developed during the past fifteen years it was to be anticipated that resection would once more receive a therapeutic trial, particularly for those cases in which collapse measures had failed, or were likely to fail.

In 1891 Tuffier resected the apex of a lung for pulmonary tuberculosis and four years later the case was presented as cured. This apparently was the first successful procedure of this type. Lawson, Doyen and Macewen, each also succeeded in resecting tuberculous lung tissue during the latter part of the nineteenth century. During the twentieth century reports of resections for tuberculosis were notably absent from the literature until, in 1935, Freedlander[1] reported a case of lobectomy in pulmonary tuberculosis. Since that date reports have appeared in increasing numbers.

In 1942 Thornton and Adams[5] collected eighty cases of pulmonary tuberculosis which had been treated by resection of lung tissue. The mortality for pneumonectomy was 45% with an unsatisfactory result in an additional 10%. For lobectomy the mortality was 25% with an unsatisfactory result in an additional 6%. Recently Overholt and his associates[2] have reported their own series comprising, at the time of publication, two hundred and twenty-five cases. The operative mortality in this and in other similar, though smaller, series has become reasonably low. Due to progression of the disease, however, the case fatality has remained about twice the operative fatality and 50% or less of the patients have been considered cured. Similar statistical results have been reported by Sweet[4] and others.

Presented at Arizona State Chapter of American College of Chest Physicians, Tucson, May 1947.

In considering the high percentage of failures it must be emphasized that in the majority resection has been employed primarily for cases in which other forms of therapy had failed or had been considered likely to fail. Resection frequently has been used as a desperate last resort in the attempt to avert an otherwise inevitable end. But in deciding on resection the surgeon must, in each case, have felt that some chance of success did exist, that the patient still had sufficient pulmonary and vital reserve to live at least a restricted life should success ensue. In most of these individuals resection was considered obligatory in order to achieve a cure, and it behooves us to find the means whereby we may avert the complications and decrease the number of failures that resection entails.

The conditions in which resection has sometimes been considered advisable include the following: 1. Extensive or multiple cavitation confined to one lobe or one lung. 2. Tension cavities. 3. Bronchial tuberculosis, particularly with bronchostenosis. 4. Bronchiectasis complicating tuberculosis. 5. Tuberculoma. 6. Lower lobe tuberculosis. 7. Unilateral disease which has failed to respond to collapse therapy. 8. Tuberculous pneumonia confined to one lobe or one lung. 9. Uncontrollable hemorrhage, and 10. Resection has at times been performed as an elective procedure in cases which would probably be suitable for collapse therapy. Coexisting carcinoma or tuberculosis simulating pulmonary neoplasm, where an accurate preoperative diagnosis cannot be made, may also be considered indications for pulmonary resection.

Excellent results have been obtained in some cases falling into the above categories. Disaster also has occurred when ideal conditions for resection have been thought to exist. How can we determine more accurately the probable outcome of cases in which resection is considered?

It has been common experience that certain cases of pulmonary tuberculosis will progress to a fatal end no matter how early the diagnosis is made, no matter what therapeutic measures are used. We have seen this under bed rest, with pneumothorax, with thoracoplasty. Cases subjected to resection have appeared to make an excellent response only to evidence, eventually, progressive tuberculous disease in the remaining non-resected portions of their lungs. Manifestly there are certain heretofore non-measurable factors which play a determining role in the patient's ability to recover from his disease. These factors have to do perhaps with the number and virulence of the infecting organisms, but more particularly, I believe, with the patient's "resistance," with immunobiologic factors which have not as yet been cleary defined. There is little question that certain individuals and racial groups manifest greater susceptibility to tuberculous infection than do others. There is likewise an apparent variation in an individual's resistance to his disease. This may be evidenced by recurring episodes of exacerbation and recrudescence or more commonly, in those cases that recover, by a gradual subsidence in the toxic manifestations and concommitant resolution and healing of the pulmonary lesions. The patient whose initial response to bed rest is good is the patient who is most likely to have a favorable prognosis whether or not the aid of pneumothorax or surgical therapy may prove necessary.

It has been our experience that the cases which have responded best to resection, as well as to the various forms of collapse therapy, are those in whom the lesions have become relatively stabilized; while those in whom a favorable immunobiologic status has not been established are more likely to evidence progressive disease and exacerbation of lesions in portions of the lungs which were not thought to be significantly involved. It is on this basis that I consider resection contra-indicated, except perhaps as a last resort, when the disease is acute, showing a tendency to spread, and when the patient's clinical condition is such as to suggest marked lack of resistance with evidence of progressive invasion by tubercle bacilli.

Now, at last, there is evidence that medications will be available which will be effective in controlling tuberculous infection. Certain sulfonamides gave some promise but appear to have been insufficiently effective and too toxic. Far more promising is streptomycin and we have every reason to hope and believe that even more effective agents will be forthcoming. It is possible that streptomycin, or some other agent as yet undiscovered, will eliminate the need for resection and for radical collapse measures in cases for which these are now being used. I have seen what appeared to be a fulminating terminal tuberculous pneumonia resolve, miraculously, under a course of streptomycin therapy. Before streptomycin was available I resected such a

lung in desperation. Despite early gratifying response, tuberculous involvement of the remaining lung developed and gradually progressed to a fatal conclusion.

Too often permanent irreversible changes have occurred in the tuberculous lung and bronchi by the time the diagnosis is made. Destruction of lung tissue with excavation and extensive fibrosis, bronchial damage with ulcerations, stenoses, ectasia—such changes will persist even if the tuberculous infection may be controlled by medical management. As in similar localized bronchopulmonary changes that are non-tuberculous in origin it seems likely that resection may more often prove to be the treatment of choice *if* the incidence of tuberculous complications following resection may be diminished. By confining resection to the bronchopulmonary segments involved we may eliminate the complications and excessive loss of pulmonary function that sometimes occur with artificial pneumothorax, the sometimes crippling and deforming results of thoracoplasty and the permanent collapse of uninvolved lung tissue that this type of surgery almost invariably entails.

The important complications that occur following resection of tuberculous lung tissue are primarily tuberculous in origin and related to the behavior of the tubercle bacillus. Tuberculous spread and exacerbation or reactivation of pre-existing lesions in non-resected lung parenchyma are the most frequent complications and the most serious from the prognostic standpoint. Tuberculous or mixed infection empyema is particularly likely to occur if there was pre-existing bronchial tuberculosis which pre-disposes to ulceration of the bronchial stump with fistula formation. Tuberculous empyema associated with a fistula predisposes, in turn, to tuberculous spread. It seems not unlikely that streptomycin, or other preparations still unknown, may lower or eliminate the incidence of any or all of these complications. If streptomycin is used in conjunction with surgery, pre- and postoperatively, we may find that tuberculosis is as safe for resection as it is for the time-honored collapse measures that are in use. I consider this worthy of thorough investigation and adequate trial.

The cost of streptomycin is still such that it is beyond the means of most of the patients we see. My experience with it as an adjunct to the surgical therapy of pulmonary tuberculosis is hence extremely limited. I can only state that, thus far, it has appeared to be of definite value. Of forty-two resections for pulmonary tuberculosis since January 1944, only three have been performed during the past year. This reflects the fact that our early enthusiasm was considerably dampened by unfortunate late developments and end results in some of the cases. I strongly suspect that as streptomycin becomes available to more of our patients resection will seem to be the treatment of choice in a larger group than heretofore.

I shall review, briefly, our management of cases in whom resection of tuberculous lung tissue is considered or performed. Following preliminary study, which includes a diagnostic bronchoscopy, each case admitted to the University State Tuberculosis Hospital is reviewed at a conference attended by members of the medical, surgical and radiological staff. Should further study seem desirable the case is conferenced again following performance of such additional procedures as are recommended, or following a period of observation, before a final decision regarding management is reached. When preliminary bronchoscopy has demonstrated the presence of tuberculous bronchitis bi-weekly bronchoscopic treatment and observation is instituted until such time as maximum improvement or healing seems to have occurred. Bronchospirometry has not yet been available and we have had to depend on clinical impressions for an estimate of pulmonary functional reserve.

Preoperative preparation of patients scheduled for pulmonary resection includes postural drainage and the parenteral administration of penicillin. In the future we plan to use streptomycin, when possible, for a period of at least two weeks before surgery or until a maximum favorable response appears to have been obtained. Immediately before operation bronchoscopic aspiration of secretions is performed unless secretions and sputum volume have been exceptionally scant. In any case the patient is cocainized and an endotracheal tube is introduced either before or after the induction of cyclopropane anesthesia. Through this tube every attempt is made to keep the tracheobronchial tree free of secretions by frequent aspiration, before, during and following the operation. Occasionally intravenous sodium pentothal has been used for

induction but deep narcosis is always avoided.

Overholt[2] recommends suspending the patient in a face-down position claiming two advantages, namely: that gravity drainage from the surgical side into the contra-lateral lung is eliminated and that respiratory function of the opposite lung is less impaired during the course of the operation. Until now we have not tried this position and have usually used the conventional side position, elevating or dropping the head of the table according to whether or not we wish to confine the secretions to the involved side or to drain them with the aid of catheter suction. A dorsal recumbent position with anterior intercostal approach was used in a very few of the earlier cases in whom pneumonectomy or upper lobectomy was planned. In almost all of our cases we have used a posterolateral incision, resecting a long segment of one rib through the bed of which a satisfactory exposure for the operation in question could be obtained. Rarely short segments of one or more adjoining ribs have been resected in order to improve exposure.

Pleural adhesions are often very extensive. As a rule we do not attempt immediately to separate all adhesions but only enough to permit exposure of the bronchus that is to be divided. This bronchus is isolated and clamped as soon as feasible in order to eliminate further spillage from the bronchopulmonary segment or segments involved. Frequently isolation and division of the adjacent branch of the pulmonary artery has seemed necessary before the bronchus could be isolated and clamped with safety. Once the bronchus is clamped, further freeing of adhesions and development of interlobar fissures may be accomplished with less danger of dislodging and expressing infected material into the tracheobronchial tree during these maneuvers.

Ordinarily I ligate and divide the branch or branches of the pulmonary artery before attacking the veins. All large vessels are treated in the same manner. They are divided between ligatures of braided silk (No. 3 Deknatel) and transfixion sutures (No. 1 Deknatel). Transfixion sutures are not always used distally. The bronchus is dissected up to the nearest proximal bifurcation and doubly clamped in such a manner that little or no blind pocket will remain. After protecting the pleural cavity from spillage with warm saline packs the bronchus is divided between the clamps and the surgical specimen is removed. For closure of the bronchial stump I place interrupted sutures of tantalum wire (0.007 inch on atraumatic needles) around the clamp that remains, tieing these after the clamp is removed. The pleural cavity is then thoroughly irrigated and the bronchial stump is pleuralized. Sulfathiazole crystals and penicillin have been used routinely in the pleural cavity and chest wall structures. I propose also to use streptomycin topically on the bronchial stump, particularly when there has been evidence of bronchial disease. We never drain the pleural cavity following pneumonectomy and, contrary to custom, I have been using intercostal drainage tubes following lobectomy only when gross contamination of the pleural cavity has occurred. In lobectomy cases air is aspirated from the pleural cavity during closure of the chest wall in order to re-expand the remaining ipsi-lateral lung tissue. Postoperatively expansion is maintained by thoracenteses as indicated.

On three occasions we have performed segmental resections of the lingula or of the dorsal division of the lower lobe. The technique in these cases has been the same as I have used in segmental resections for non-tuberculous disease and is similar to that which has recently been described by Overholt and Langer[3]. The segmental bronchus is first isolated and clamped. Slight positive pressure anesthesia expands the remaining portion of the lobe in question and outlines the pleural projection of the segment to be removed. The visceral pleura is incised along this line of demarcation. After dividing the bronchus between clamps the segmental vessels are divided between ligatures and the segment is removed by gentle traction on the bronchus and by blunt separation along the relatively avascular plane which separates it from the remainder of the lobe. Formerly I attempted to pleuralize the exposed surface of the non-resected portion of the lobe. As Overholt has shown, this procedure is not necessary. It is undesirable, since, by infolding and distortion, considerable pulmonary tissue is sacrificed and obliteration of the pleural cavity is less readily accomplished.

In all cases an intravenous drip is established at the commencement of the operation and blood is transfused during and after surgery as indicated. Ordinarily between 1000 cc. and 2000 cc. of blood have been used. The anesthetist thoroughly aspirates the tracheobronchial tree at the

close of the operation, and if any significant amount of secretion is present, or if rhonchi can be heard with a stethoscope, further aspiration is performed under bronchoscopic guidance. Postoperative care includes the measures used for all major thoracic operations. Continuous oxygen and intermittent carbogen inhalations are used for variable periods. Penicillin therapy is continued for three or more days. In the future we hope to use streptomycin continuously until the danger of tuberculous complications seems negligible or until such complications have been satisfactorily controlled. The elimination of secretions from the tracheobronchial tree during the postoperative period is of utmost importance. This problem may not arise, particularly when all significantly involved bronchopulmonary segments have been removed. However, it is better to be over-cautious in this respect and many patients must be aspirated repeatedly with a catheter or through a bronchoscope.

In our first cases the early response to resection was so good, with immediate sputum conversion and disappearance of all clinical evidence of active disease, that we discharged a good many within a few weeks of surgery to follow a modified type of rest regime at home. Since some of these cases have shown evidence of reactivation we are now far more conservative, and more prolonged sanatorium care is recommended. Bronchoscopic inspection of the bronchial stump six weeks postoperatively, as recommended by Overholt, is also practiced and if mucosal lesions are found bronchoscopic treatment is instituted. Other complications are treated much as though their occurrence had been independent of resection.

We have not yet accepted the routine use of thorocoplasty following pneumonectomy. In an attempt to avoid the additional surgery we have in some cases maintained an artificial pneumothorax to prevent mediastinal shift and overdistention of the remaining lung. In one case we have introduced blood into the pleural cavity to accomplish the same end. Oil has been considered but has not been used in any of our cases. Occasionally we have performed thoracoplasty following upper lobectomy and a phrenic interruption following lower lobectomy. None of these procedures has been routine.

My personal experience with resection for pulmonary tuberculosis is based on forty-two cases operated upon since January, 1944. All but three of these operations were performed more than one year ago, permitting a follow-up of from one to three years in 39 of these cases. This series is too small for statistical analysis but I shall attempt to summarize the cases according to the indications for resection, the complications and results.

Thirteen patients were subjected to pneumonectomy. The indications were as follows:

1. Extensive unilateral disease not amenable to collapse therapy, 6 cases.
2. Bronchial complications (stenosis of stem bronchus, bronchiectasis or both), 6 cases.
3. Suspected carcinoma, 1 case.

Of the first group one had had a previous thoracoplasty, preceded by pneumothorax, phrenic interruption and pneumoperitoneum. The remaining five cases had an unsuccessful pneumothorax at the time, or shortly before the time, of resection. Two of these had acute fulminating pneumonic tuberculosis involving the entire lung, and one had a lower lobe cavity and multiple tuberculomata involving all three lobes on the right. In one instance a left lower lobectomy was planned but at surgery cavitation was found in the upper lobe as well and in the final case of this group there was extensive caseous-pneumonic tuberculosis involving primarily the right upper lobe. In these last two cases thoracoplasty might have controlled the disease, though in neither instance could the prognosis with thoracoplasty have been considered good.

Of the six cases with bronchial complications five had had prolonged treatment with collapse measures which included artificial pneumothorax, phrenic interruption, pneumoperitoneum and in two cases a thoracoplasty. One of these six had extensive bronchial disease involving all segments on the right, two had extensive tuberculous bronchiectasis underlying thoracoplasty, one had marked stenosis of the left main bronchus and two had left lower lobe bronchiectasis associated with upper lobe tuberculosis. One of the latter had had no previous collapse therapy.

The only other case that had had no previous collapse therapy was the one in whom carcinoma had been suspected. He has made an uneventful recovery.

Of the thirteen pneumonectomy patients four died as a result of the operation, two from shock, one from pneumonic spread of the disease and one from pulmonary edema with acute pericarditis. Two additional patients have died

from progression of pre-existing tuberculous disease in the remaining lung. Of the six patients who are dead one conceivably might have been cured by thoracoplasty. While in the remainder resection seems to have offered the only possible chance for cure, it is possible that three of these might have been saved had streptomycin been available as an adjunct to their surgical therapy.

Serious postoperative complications developed in three of the patients who are still living. One case that had had a previous thoracoplasty developed a bronchial fistula and an empyema which has been undecked. Another developed tuberculosis of a rib and a large cold abscess of the chest wall approximately one year after her pneumonectomy. It was decided to perform a thoracoplasty but after the seecond stage she almost died as the result of a transfusion reaction and she then developed an empyema in the small pleural space that remained. The empyema is well drained and further surgery is contemplated for its obliteration. Our most recent case developed severe pulmonary edema following surgery, but responded satisfactorily to treatment. She and one other case, who developed some progression of contralateral disease, are the only pneumonectomy patients who are still hospitalized. They are also the only two in whom streptomycin has been used, and in both it appears to have been beneficial.

While only three of our pneumonectomies seem to have made an entirely uneventful recovery, all seven of those living have a negative sputum, or had when last they were seen.

The indications for lobectomy in the twenty-nine cases may be classified as follows:

1.	Lower lobe tuberculosis	15 cases
	Lower lobe cavity	9
	Associated bronchial disease	4
	Lower lobe cavity and bronchiectasis	1
	Pneumonic tuberculosis without cavity	1
2.	Upper lobe tuberculosis	14 cases
	Elective	5
	Associated bronchial tuberculosis	5
	Thick walled or tension. cavity	3
	Tuberculoma	1

In fifteen resections for lower lobe tuberculosis the right lower lobe was removed in six, the right middle and right lower in three, and the dorsal division of the right lower in one. The left lower lobe was removed in three, the left lower and lingula of the left upper in one and the dorsal division of the left lower in one.

In all cases of lower lobe tuberculosis selected for resection collapse therapy either had failed or was considered likely to fail. Of this group one had had a previous thoracoplasty, one a previous phrenic interruption with pneumoperitoneum; in seven pneumothorax had been either impossible or ineffectual, and in six lobectomy was performed as a primary procedure.

In fourteen cases of upper lobe tuberculosis the left upper lobe was resected in six, the right upper lobe in six, and the right upper lobe and right middle together in two. In seven of these patients, a previously induced pneumothorax had failed or had been inadequate to control the disease. In two cases a pneumothorax had been impossible. In one case phrenicoemphraxis and pneumoperitoneum had been tried. One patient had had a previous thoracoplasty. Of four primary upper lobectomies. two were performed because of cavity with associated bronchial disease, one for tuberculoma, and one as a purely elective procedure. Altogether, there were five cases that are classified as elective upper lobectomies in that thoracoplasty offered a fairly good chance of controlling the disease.

Resections for lower lobe cavity accounted for all three of the operative deaths that occurred following lobectomy. One patient died on the operating table of cardio-respiratory failure while a right lower lobe containing an immense cavity was being resected in the presence of a contralateral pneumothorax. Another died as a result of postoperative pulmonary atelectasis following resection of the dorsal division of the left lower lobe and the third, a five year old girl, died suddenly, presumably of shock, several hours after her left lower lobe had been removed. There was also one late death in this group, a diabetic colored man who at surgery was found to have a pneumonic involvement of the lingula of his left upper lobe in addition to a large cavity in the left lower lobe. Lower lobectomy and lingulectomy were performed. Postoperative complications included diabetic coma, bronchopleural fistula with a small empyema which responded well to drainage, and contra-lateral tuberculous spread which was treated with pneumothorax. This patient remained clinically improved with negative sputum for many months

but eventually died with progressive tuberculous disease.

There were two other late deaths following lobectomy. In both instances, contralateral tuberculosis and tuberculous pericarditis were responsible. One of these was a sixteen year old boy with a mild Froehlich's syndrome who manifested low resistance to his infection. He died approximately three months following resection of a right lower lobe containing pneumonic tuberculous involvement without cavity. The other was a young woman who had a thick walled or tension cavity under a previously performed thoracoplasty. While she lived many months with a negative sputum, following removal of her right upper and middle lobes, she required oxygen during the major portion of this time because of the complications. At least four of the lobectomy deaths would probably have responded to no other type of therapy. In two, streptomycin conceivably might have altered the prognosis and prevented the fatal outcome.

Significant operative complications occurred in three of the twenty-three patients who are still living. One of these had a thick-walled cavity in the right upper lobe underlying an inadequate pneumothorax which had been maintained for several months. A right upper lobectomy was performed and at the same time a thick fibrinous membrane was removed from the right middle and lower lobes in order to permit their re-expansion. Postoperative hematothorax and empyema were treated by a second decortication, following which a partial thoracoplasty was performed. The right middle and lower lobes are now well aereated, there is no residual empyema demonstrable, and the patient's sputum has been negative since his lobectomy was performed about eighteen months ago. More recently a rib resection for tuberculous osteomyelitis of the seventh rib with associated cold abscess has been performed. One patient had a postoperative bronchopleural fistula and a small empyema following right lower lobectomy. The fistula was repaired and the empyema pocket was filled with a pedunculated muscle flap, following which complete healing has ensued. The third patient, whose right upper lobe was resected because of cavity with associated bronchial disease, developed a postoperative spread to the left upper lobe. A left extrapleural pneumothorax followed by thoracoplasty has failed to convert her sputum and she is still hospitalized.

In twenty of the twenty-nine lobectomies postoperative convalescence was entirely uneventful. While eight have shown some evidence of late reactivation or progression of pre-existing lesions in the same or in the opposite lung, in only one does the prognosis appear to be extremely grave. In six of the eight with reactivation the sputum has remained negative or has reconverted under treatment. Thus only three of the twenty-three living patients had a positive sputum when the last report was obtained. However, there are four concerning whom we have no recent information.

SUMMARY

The morbidity and mortailty associated with resection for pulmonary tuberculosis is still too high. Resection cannot be considered as a therapeutic procedure to supplant the various forms of collapse therapy which have been shown, by long experience, to be relatively safe and effective. There are cases, however, which collapse therapy cannot control and for some of these resection may provide the only means to cure.

Forty-two cases of resection for pulmonary tuberculosis are reported. In thirteen pneumonectomies there were four operative deaths and two late deaths from progression of the disease. Of seven patients still living two have had empyemas (one wtih fistula), and one has had a slight progression of disease, which has been clearing under treatment with streptomycin. All seven have negative sputum and are considered to be improved. In twenty-nine lobectomies there were three operative deaths and three late deaths from progression of the disease. Of twenty-three patients still living two have had empyema (one with fistula), one had a postoperative spread of the disease and eight have had evidence of late reactivation of pre-existing lesions.

In the entire series of forty-two cases empyema has occurred in six and been associated with fistula in four. Two cases who had empyema with fistula are dead, one has had a Schede thoracoplasty and in one the empyema is cured. Three of the forty-two patients had postoperative spread of the disease and two of those are dead. Thirteen have had late reactivation, exacerbation or progression of pre-existing lesions. Of these four are dead. Nine of the thirteen are

living and are considered improved, the sputum being negative in seven. Of thirty living patients however, the ultimate prognosis is defitients twenty-siven had a negative sputum at the time of the most recent examination. In four of the living patients however, the ultimate prognosis is definitely poor.

I know very well that I could have avoided several disasters by a more careful selection of patients; but in a desperate situation one cannot deny one's patients even the most remote chance for survival. Medical therapy may in the future make it possible for us to avoid some of the disasters that we have incurred. It may make pulmonary tuberculosis as safe for resection as it is for the various collapse measures. It may make resection of irreversibly damaged or destroyed bronchopulmonary segments the procedure of choice. Or better still, the need for radical surgical interference may some day be largely eliminated.

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OBSTETRIC ACTIVITIES IN A SMALL GENERAL HOSPITAL

COMPARISONS AND COMMENTS ON LESSENING MATERNAL MORTALITY

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THIS paper is prompted by a study of the statistics in the excellent report[1] by Charles Newberger, M. D. on "Obstetric Activities in Illinois Hospitals During 1945," and the able discussions of Dr. Robert D. Mussey of Rochester, Minnesota and Dr. A. E. Kanter of Chicago, Illinois.

Arizona has no special legal requirements for hospitals giving maternity service as those required in the State of Illinois.

Arizona Vital Statistics laws[2] do not require any special report on maternity deaths.

"Dr. Hilda H. Kroeger, our Maternal and Child Health Director, has been trying for some time to obtain complete information on maternity deaths. As maternity deaths are reported to us, Dr. Kroeger mails to the physician reporting the death a form to be filled out and returned to her, giving rather detailed information in connection with the death. (29 questions.) The results we get from the doctors on this follow-up questionnaire vary considerably. Some do not return it, some give very little information than is contained on the death certificate, and a very few give very detailed information." Which is equivalent to, "let your conscience be your guide."

Read before the Staff of the Prescott Community Hospital. February 14 ,1948.

It would appear then, that Arizona is far behind Illinois in certain requirements governing the practice of obstetrics. To clarify this last statement, I shall quote Dr. Newberger: "Among the requirements for licensure are those dealing with segregation of the obstetric unit, adequate physical arrangements, trained personnel, essential equipment, approved techniques, and acceptable records. Included in the item of records is the requirement of submission to the division of maternal and child hygiene of a monthly report which shows the number of mothers and infants cared for, the type of delivery, the operative procedure employed, the incidence and type of complications encountered, the frequency of abortions and ectopic gestations, and the number and causes of still-birth and neonatal and maternal deaths." During 1945, 232 hospitals in Illinois reported 126,309 births.[4]

To make even a small showing for comparisons we have taken all the cases receiving maternity service in our hospital for the years 1946-1947, a total of 592 cases:

Total number of obstetric cases cared for	582
Delivered over 20 weeks	529
Abortions under 20 weeks	48
Ectopic	5

MORBIDITY—the definition is based on that of the American Committee on Maternal Welfare (T 100.4° - 38°C on more than any 2 of first 10 days after first 24 hours)—we record—

Pre natal	3
Post partum	12

of the pre-natal cases, there was—

Abscess vagina	1
Upper respiratory infection	1
Abortion—fever when admitted	1
	3

Post partum cases—

Pyelitis	1
Mastitis	3
Upper respiratory	1
Cesarean sections	5
Post partum infection, mild	2
	12

Type of Delivery—

Spontaneous		517
Abortions		48
Ectopic		5
Forceps	Low	3
	Medium	2
	High	1
		6
Cesarean		12

Indications for Cesarean Section—

Placenta praevia	7
Eclampsia	1
Dystocia	1
Rh Factor	1
Not stated	2
	12

There were no maternal deaths in the 582 cases treated during the years 1946 and 1947. No mechanically induced labors and no destructive operations on the foetus. There were 533 live-born babies, 13 premature, 1 slightly injured at birth. There were 11 still-births and 11 neonatal deaths.

It is of interest that there was only one post partum hemorrhage and only one transfusion given.

Other Conditions recorded—

Manual removal of placenta	5
Uterine packing	5
Version	1
Perineorrhaphy—primary repair	81
Episiotomy—primary repair	245
Anesthetic—paraldehyde and/or	231
Ether—obstetric—surgical	498

Operative procedures for delivery of the infant—In the Illinois hospitals the total forceps deliveries was 22.7%; in our hospital 1.1%. The total cesarean sections in Illinois was 3.6%, while in our hospital it was 2.26%.

The Illinois hospitals did not list such minor procedures as primary perineorrhaphy and episiotomies, but since these minor procedures may result in annoying and often serious infections if not promptly and properly repaired, we have included them in our report. The percentage of primary perineorrhaphy—15.4% and episiotomies—46.7% seems high but the results have warranted the frequency.

The anesthetics used should receive some consideration. Since 1935 we have been using as rectal analgesia (amnesia), paraldehyde and benzyl alcohol. In this series it was used alone in 44.3% of the cases and/or with ether to obstetric degree or surgical degree in 85.5% of the cases including the abortions, cesareans and ectopic gestations.

Now let us go back 100 years and learn to what they attributed obstetric morbidity and mortality in those days of helpless ignorance[3].

The Matron's Manual of Midwifery by Fredrick Hollick, M. D.: Puerperal Fever—

"The causes that produce this terrible disorder are not very well understood; some of them probably predispose to it before delivery, or even before pregnancy, while others are connected with labor and its consequences. Among the former may be mentioned improper diet, an inactive life, anxiety of mind, bad air, a damp situation, a full habit, or great weakness, the frequent use of stimulants, and certain excesses. The principal causes operating immediately are difficult labor, violent treatment, the use of instruments, tearing away the placenta too soon, retention of the lochia, cold, rising from the bed too soon, depression or excitement of the mind, overexertion in talking to and seeing company, and neglect of cleanliness. The most frequent cause probably is cold or damp which checks the lochia and the perspiration, and leads directly to inflammation. It is on this account that the complaint is nearly always worse in winter than in summer, and prevails mostly in low damp situations, and badly ventilated apartments, or in those insufficiently warmed."

A half century later, when one of us (C.E.Y.) took over the junior residency at Columbia Hospital for Women, Washington, D. C., in the summer of 1899, he was called in conference with the chiefs[2] of the obstetric services, and very forcibly impressed with the fact that there had been a considerable morbidity and several deaths from puerperal infection during the previous year. If these infections continued under his supervision, they would close the obstetric

department for a clean-up, and there would be no more medical students invited to witness labors.

Rubber gloves had been introduced in the Johns Hopkins Hospital by William Stewart Halstead, 1889-90, and at the beginning of this internship, rubber gloves were being more generally used.

With meticulous obstetric technique as practiced at that time by the entire obstetric department, we greatly reduced infections, and before the college year ended, we instructed classes of senior students from the medical schools in the proper technique of using sterile rubber gloves and making obstetric examinations with them, without a perceptable increase in infections in our obstetric department.

It may be of interest to recall a few excerpts from a copy of "Routine Treatment of Patients in the Maternity Department of Columbia Hospital for Women 1899-90." The family and personal history was required in each case, and where malaria was endemic as in Washington, D. C., the temperature and pulse were recorded for three days anti-partum, discontinued if normal. A catheter specimen of urine was sent to the laboratory, and a physical examination including menstruation was done at the earliest opportunity.

In preparation for delivery, an all over tepid bath (tub). A vaginal examination was made, using rubber gloves after proper preparation of the vulva, i. e., "clipped," not shaved, scrubbed with antiseptic soap followed by washing with carbolic acid 1-80 or Bichloride of Mercury 1-1000. Bichloride pad to vulva.

For the delivery—doctors and nurses not to have handled infectious material for 48 hours previous. Hands scrubbed with antiseptic soap, rubber gloves soaked in 1-200 Lysol solution for at least one-half hour or 1-1000 Bichloride of Mercury (put on wet). The gown was not sterile nor was the rubber apron.

Placenta—If not expelled within 20 minutes after constant kneading of uterus, Crede method employed, failing, notify chief and administer chloroform for manual removal.

Perineum—moderate laceration, no treatment; if necessary, a primary perineorrhaphy is performed, with or without chloroform.

Intra-uterine douch was used for bleeding not controlled by ergot or kneading of uterus, or relaxed uterus; macerated foetus, manual removal of placenta, always.

Puerperium — If A. M. temperature above 100° or P. M. temperature above 101°, report to Chief of Service. Sapremia-uterine cultures taken, followed by sterile salt solution douch. Sometimes 1-50 carbolic acid douch followed cultures. Septic infection, carbolic acid douches daily or 1-200 Lysol douches. Patients sit up in bed on eighth day, out of bed for one-half hour on ninth day, and discharged from hospital between 14th and 21st day.

Some statistical results with this technique on 231 cases in 1898-99[4]. There were only 11 forceps deliveries, inferior strait—5=2.12%, superior strait—6=2.59%%. There were 4 maternal deaths or 1.7%, two from puerperal septicemia, one from hemorrhage (admitted with retained placenta, died two hours later), and one from eclampsia. The total eclampsias was 3; two recovered. The puerperal fever cases numbered 3, with 2 deaths. These figures do not include cases admitted on the gynecological service (surgical) i. e., 1 puerperal septicemia, 1 abdominal pregnancy died, and 2 ectopic pregnancies recovered.

There were 41 perineorrhaphies, 1 episiotomy, and 1 symphysiotomy.

In those days we were seeking after the truth concerning puerperal infection. There was no question "that most often the attendants, physician, nurses, or midwife infected the patient" (DeLee); the question before us was how far could we safely go without a change in technique, especially with reference to vaginal examinations. We conducted a series of experiments on 65 cases; results: vaginal examinations on patients who later had a temperature above 100°—29.2%; vaginal examinations on patients who later had a temperature below 100°—50.7%; patients who had no vaginal examinations who had temperature above 100°—7.07%; patients who had no vaginal examinations who had temperature below 100°—12.3%. While this experiment proved nothing definite, we were assured that with meticulous care we could continue to make vaginal examinations of patients in labor with a reasonable degree of safety.

However, four years earlier, 1893[5] "Reis and Kronig recommended rectal examinations in labor, but it was not until the employment of rubber gloves became general that it was possible to evoke any interest in the matter." (Today

our hospital uses rectal examinations in labor except in rare instances—in dystochias, preparation for operative procedures, etc.)

It was about this time (1899) that we learned that antiseptic douches were not the "treatment" in puerperal infections. DeLee, 1924, stated,[6] "In the eighties and early nineties the women were given carbolic and bichloride douches before, during, and after labor. This was found harmful, and now a more aseptic technique is practiced, identical in principle with that suggested by Semmelweis. Semmelweis noted the clinic used for instruction of midwives had a mortality of 2.7% from puerperal fever, while that for doctors had 11.4%. The discrepancy between the two clinics was public knowledge—it was the subject of municipal investigation; the midwives taunted the physicians with the facts, and the patients, when they learned that they were to be assigned to the doctors' clinic, on their knees would beg to be sent home. . . . Everything was in question; everything was unexplained, everything was doubtful—only the large number of deaths was a positive fact."

As late as 1931, that nationally known teacher of obstetrics at Johns Hopkins, J. W. Williams[7] stated: "It is doubtful whether the results are materially better today than they were before the introduction of aseptic methods, for the reason that the doctrines of asepsis have not yet permeated the rank and file of medical men, and as a consequence in many localities their results are worse than those obtained by midwives. . . . Our obstetric results constitute a striking arraignment of our obstetrical training, and indicate that the rank and file of medical practitioners are no better trained than their predecessors, and consequently with the single exception of tuberculosis, puerperal infection still constitutes the most important cause of death among women during the child-bearing period."

I quote a very recent instance of "self improvement" in the lessening of puerperal fever[8]: "While the examples used reflect the experience of Vanderbilt University Hospital, similar analyses (statistics) are being made in other hospitals. . . . Ward patients showed a puerperal fever rate in excess of 12%, low cost private patients showed the next highest rate, and private patients had the lowest rate. The rate for ward patients seemed excessive and the rates were rising. Then about April, 1945, the practice of issuing monthly reports in puerperal fever was adopted and the problem was kept constantly in front of the intern staff. They, in turn, posted a list in the nurses' station in the ward of all patients delivered and whether or not they developed puerperal fever. A noticeable rivalry developed and it came to be considered almost a disgrace for an intern to have one of his patients develop puerperal fever. It may be seen from the graph that the rate for 1945 was lower than for any of the three preceding years, and for the first six months of 1946 it has fallen to a new low and is now at the level of the rate for low cost private patients." (About 6%)

The last decade has brought much pleasure in improvement in obstetric results; an obstetric conscience now exists.

The American College of Surgeons' Manual of Hospital Standardization 1946,[9] under minimum standards for obstetric departments in hospitals, states in part, (1) "There shall be in all approved hospitals caring for obstetric patients a properly organized and equipped department of obstetrics, providing exclusive and adequate accommodations for mothers and the new-born. Morbidity[8]—All hospitals caring for obstetrical patients shall adopt a morbidity standard by which they can better control morbidities. In all general hospitals, except the very small ones, a strict segregation of patients can be arranged by the use of a wing or floor with separate nursery service, equipment, and supplies."

Three different sources and points of view concerning lessened maternal morbidity and mortality in labor are here presented—

(1) Bulletin of the American College of Surgeons, December, 1947—"The fact that in 1946 births in hospitals surpassed for the first time the two million mark, forcibly draws attention to the increasing utilization of hospital facilities for maternal care, which imposes constantly growing obligations to improve obstetrical and nursing service."

(2) The Journal of the American Medical Association, November 22, 1947, in an editorial stated, "The decrease in maternal and infant mortality rates in the United States during the last ten years has been accompanied by an increase in the percentage of births attended by physicians and in the number of births that occurred in hospitals. A recent report by the Unit-

ed States Public Health Service shows that the infant mortality rate in 1935 was 55.7 per thousand live births, and that midwives attended 10.7 per cent of the births. Ten years later the infant mortality rate was 38.3 and the percentage of births attended by midwives was down to 6.1. The maternal mortality was 5.8 per thousand live births in 1935 and 2.1 in 1945. The percentage of live births attended by physicians in a hospital in 1935 was 36.9; ten years later it was 78.8. The percentage of births attended by physicians not in a hospital decreased during the same period from 50.6 to 14.7. These figures are significant; they show clearly the results of two of the more important factors in the preservation of life among mothers and infants."

(3) Editorial American Journal of Public Health, November, 1947[11]—in part: "One of the most striking achievements in the whole realm of vital statistics is the reduction in the maternal mortality in the United States during the past decade. Between 1915 and 1933, this rate fluctuated between 6 and 8 maternal deaths per 1000 live births (except for an increase to about 9 in 1918). Since 1933, there has been a steady and continuous decline to a trifle over 2 such deaths per 1000 live births in 1944 and 1945.

"This is a really extraordinary phenomenon. It is difficult to think of any really comparable instance in which the mortality rate from any particular disease or group of diseases in the United States has been cut by two-thirds in one decade.

"What did happen in the thirties was the conduct of a series of studies by the New York Academy of Medicine and by other state and local medical societies of the causes of maternal mortality in routine family and institutional practice; and these studies led to clear and courageous conclusions in regard to the considerable volume of maternal deaths due to faulty obstetrical practice and, particularly, to unnecessary recourse to instrumental deliveries.

"These reports brought about amazingly prompt reform in such practice; and it seems probable that this factor—the one new factor which entered the picture ten years ago—must be given major credit for the results of the past decade. If such be the case, we have here a striking example of an outstanding public health success accomplished largely by the Medi-

SOME COMPARISONS IN OBSTETRIC PROCEDURES - RESULTS

SOURCE—LOCATION	YEAR	TOTAL	FORCEPS	CESAREAN	ECTOPIC	TRANSFUSIONS	MORTALITY
Prescott (Arizona) Community Hospital	1946 and 1947	528	1.1%	2.26%	Total - 5 9/10 of 1%	1	0
ILLINOIS— 232 Hospitals	1945	232 Hospitals 126,309 Births	22.7%	3.6%	1 to 637 Births Total - 90 7/10 of 1%	1.7%	1.7 per 1000
One Hospital		34		23.5			
One Hospital		464 Mothers					17.8 per 1000
118 Hospitals		47,680					0
Columbia Hospital for Women, Washington, D. C.	1899	234	4.7%		Ectopic—2 Abdominal—1	0	Total - 17 per 1000 Puerperal Fever - 8.5 per 1000
Vienna Lying-In Hospital (Semmelweiss) Midwives' Clinic	About 1847						27 per 1000 Delivered
Doctors' Clinic							114 per 1000 Delivered

cal Profession itself through the leadership of its own professional organizations."

In conclusion—Dr. Charles Newberger closes his Illinois report with a paragraph so fraught with precept and promise that I take the liberty of quoting it: "It is justifiable to stress again the value of critical examinations by the hospital staff of the information made available to them. Reemphasis may well be made that such study should lead to improvement in trends of obstetric practice, to stricter observance of sound indications for interference, to lowering unduly high operative rates in some institutions, to less frequent resort to cesarean sections in others, to more ready use of blood or plasma for prophylaxis or for treatment and to greater awareness of the importance of complete and accurate medical records. Such procedures should result in a decrease of obstetric complications, earlier recognition and more adeuqate treatment when abnormalities arise and a further reduction of mortality rates, making childbirth safer for the mother and her infant."

There never again will be heard the lamentation of Semmelweis, "Everything was in question; everything was unexplained; everything was doubtful—only the large number of deaths was a positive fact."

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THE RELATIONSHIP OF NEUROLOGY TO PSYCHIATRY

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BIRTH is a painful process, and I am certain that you have had your problems in establishing for the first time this newest section of neurology and psychiatry. Before birth comes marriage, however, and I am happy to see that your marriage concerns two highly compatible and legitimate partners—neurology and psychiatry. May your union be permanent, and may you not find it necessary or expedient to consider separation in the years that lie ahead. To me the two specialties which you represent ought to be inseparable, stemming as they do from a common parent, internal medicine, and directed as they are, toward an understanding of brain and psychological mechanisms.

I have chosen my subject of this evening with a good deal of hesitation, and diffidence, in view of the recent flurry of contributions dealing with the problem. In the eyes of many neurologists, psychiatry should begin with neurology; conversely most psychiatrists want little or nothing of that specialty.

Recent months have witnessed an orgy of breast beating on the part of neurologists, who weep over the loss of infectious diseases, neuroses, brain tumors, neuritis and of other diseases, leaving to them the large and optimistic field of the degenerative disorders. Conversely, psychiatrists in recent years have protested against the need for neurological training, and through the medium of the specialty board, have endeavored to free themselves from the fetters of neurology. There are some who even foresee the disappearance of neurology as a specialty. The result has not been an impasse—as yet—but it has seemed to create problems and controversy out of which may grow a better understanding of mutual relationship if the difficulty is approached in the proper fashion—objectively, to give it a psychiatric orientation; cortically, if you are organically minded.

Mark Twain is responsible for the story that if you engage an Englishman in conversation the talk will sooner or later turn to sports; in a Russian it will eventually revert to women; and in the case of a Frenchman, to la patrie. As a neurologist, I find myself concerned with the problem of neurology and psychiatry, wher-

Read before the Section of Neurology and Psychiatry of the Arizona State Medical Association, in Phoenix, Arizona, November 8, 1947.

ever I meet with my psychiatric friends. Let the conversation begin where it may, sooner or later the controversy begins and the battle is engaged. The argument is healthy, provided it is permitted to remain on rational levels, because it stems from a grudge on the part of neurologists who, I think, regard their structural concepts as being too flippantly discarded by psychiatrists, and from an unconcern or indifference on the part of psychiatrists, who see little of value in organic concepts for the understanding of psychological motivations or personality structure. There are even those among the neurologists who decry the absence of noblesse oblige among their psychiatric colleagues, a deference due them because of an older and more factually grounded specialty. Indeed it seems to me that neurologists have become rather defensive about their specialty, to the degree that one of my psychiatric colleagues asked me recently what I thought accounted for their attitude. I was disinclined to comment on the problem at the time, because I did not feel that I had thought the matter through, but it has bothered me a good deal, and I should like to take your time this evening to analyze the reasons for the controversy between neurology and psychiatry.

Stated briefly, the controversy is resolved as follows: A portion of psychiatry, how great it is difficult to determine, believes that the two specialties should be separate, and some have even gone so far as to advocate a separate specialty board for psychiatry. Whether such psychiatrists are many in number is not important; the vital issue is that they are sincere enough to have expressed their feelings in the matter, and they have given rise to spirited controversy.

What is the source of their beliefs? I think they arise from the following assumptions:

1. It is not possible to practice both specialties adequately.
2. Neurology is of no consequence to a psychiatrist and offers him little or no help in his practice.

These are the main premises, which I should like now to analyze and, if possible, to resolve.

The problem as to whether one can practice both neurology and psychiatry skillfully—I think the psychiatrists would object to the term adequately—appears to me to be entirely a matter of training, provided of course that the trainee is good material to begin with. I can see no incompatibility here provided the physician being trained is willing to spend the necessary time in basic training, a period of two years in neurology and two years in psychiatry as recommended by the American Neurological Association. If in addition, the candidate in question wishes to devote a year or more to training in psychoanalysis, he seems to me to have all that is necessary to practice both specialties. I believe that he can practice them skillfully, and I find it difficult to understand why it is necessary to devote one's time entirely to one or the other of the two disciplines. A preference for one or the other specialty is understandable by virtue of longer or more fundamental training in either neurology or psychiatry, as well as personal preference. It is possible to be more skillful in one or the other, but it does not follow that one is thereby excluded from the adequate handling of the less preferred specialty. A neurologist may prefer structural cases, but a good neurologist should be able to diagnose and treat psychogenic problems. I assume, of course, that such a neurologist is trained in modern concepts of psychiatry, that he has enough of that element of simpatico to grasp the meaning of emotional problems, and that he is not one of those who are willing to overlook all that psychiatry has gained, in order to press a structural concept of emotional disorders. Indeed, in these days of emphasis on the understanding of the personality in relation to his disease, even the neurologists might be encouraged to try their hand at psychiatry. For purposes of research and teaching, devotion to one or the other specialty may be desirable, but for the practice of medicine, there should be no incompatibiilty provided the training has been adequate. That this is apparently the conception of a number of younger specialists is attested to by the fact that more than 30% of those certified by the American Board of Psychiatry and Neurology have certificates in both specialties. To the young specialist entering practice, there is no sharp division between neurology and psychiatry, for the reason that his referring doctor often makes no clear distinction between the two faculties. He must be able to handle a problem in either field, and in such a case he must have the training necessary for good prac-

tice. A strict cleavage between the two specialties seems to me to destroy much that psychiatry has fought for in recent years. If the internist can be encouraged and relied upon to handle the emotional and personality problems associated with the diseases which he handles, surely the neurologist with a better training in such matters can be trusted to do so. To the physician who needs help in such problems the schism is incomprehensible in these days of emphasis on the agglutination of soma and psyche. I am very much afraid that those psychiatrists who demand a sharp separation of the two specialties are actuated by the belief that neurologists see problems only in an organic or structural pattern, and by the fear that their training along psychiatric lines has been inadequate. I should be the last to deny that the latter criticism is often the case, but it is by no means universal. Given adequate training in a receptive subject, I am unable to understand why the two specialties cannot be handled skillfully by one person. I have found that the practice of psychiatry away from the large teaching centers embodies also the practice of neurology. I find over and over again that neurological problems have been referred to and handled by psychiatrists in state hospitals who have the privilege of outside practice, demonstrating of course that in spite of his preferences, the psychiatrist is not permitted to confine himself to emotional or mental disorders alone, or that what has been regarded as such a disorder becomes revealed in the course of study as an organic disease.

I know personally many good neurologists who are also good psychiatrists, and I am sure that all of you can think of similar examples in your own lives. As a matter of fact, the psychiatrist cannot afford to be without good training in neurology. All of us must frequently decide whether a problem is structural or psychogenic in origin. For me this still remains one of the most difficult problems in diagnosis with which I have to deal. I am sure that the same is true of my psychiatric colleagues. How is it possible for a psychiatrist to determine that a problem is of psychogenic origin if he fails to have an adequate idea of what structural nervous system disease can do? And conversely, how can a neurologist come to a similar decision if he is not aware of psychodynamic mechanisms? Help can always be obtained, but it is often not desirable or necessary. The best psychiatrists I have seen have all been able to determine that they were dealing with structural rather than psychogenic problems and have turned such problem over to a neurologist for diagnosis and treatment. The issue of importance is not that they felt inadequate by training or disinclined by choice to handle such a problem, but that they had the basic knowledge necessary to cull them out. This must imply organic training; without it I cannot see how psychiatrists can expect to recognize the many organic states which pass through their hands.

I shall not belabor the issue, obvious to us all, that organic disease often appears as psychogenic counterfeits. We have all had the experience of approaching a problem of emotional or personality disorder, only to find that the issue is resolved as one of organic disease of the nervous system. We have all seen emotional disorders which proved to be brain tumors; hysteria, that curse of careless diagnosis, which has been found to be multiple sclerosis, hyperinsulinism, disseminated encephalomyelitis, epilepsy, or some other organic pattern; presenile disorders which were found to be brain tumors, etc. It is obviously impossible to detect organic disease without organic training, and the examples which I have mentioned are by no means rare in an extensive psychiatric experience.

Let us turn now to a consideration of the second objection, namely, that neurology is of no help to the psychiatrists. By this, I assume that psychiatrists mean that a knowledge of neuropathology or neuroanatomy is of no help whatever in understanding subconscious mechanisms, whatever their character. I can see no quarrel with this criticism, but I shall revert to it later. On the other hand, psychiatry is greatly beholden to neurology in a historical sense. Those who assert that neurology has done little for the understanding of psychiatry forget that negative results often bear fruit. It is important that neurology has determined no anatomical basis for dementia praecox or manic-depressive insanity, at least with our present investigative methods; and it is equally important that we have come to recognize that in those diseases in which findings have been disclosed, organic lesions have not necessarily explained anything. The work needed to be done, however, in order to free our minds for other fields of approach.

The loss of ganglion cells in the cerebral cortex in general paresis, senile dementia, or cerebral arteriosclerosis fails to explain the memory loss, the confusion, or the personality changes associated with these diseases, but it has been as necessary as was the study of the pathology of the pancreas in diabetes for the discovery of insulin, for researches on the functions of the cerebral cortex which may still bear fruit in the understandling of cortical dysfunction in mental disease or neuroses. Far from discouraging a liaison between the two specialties, neurology and psychiatry must bend their efforts to encouraging a firmer union, precisely because of differences in approach and orientation. Our understanding of poliomyelitis must depend fully as much on the epidemiologist as on the bacteriologist, but no one would be so bold as to recommend an abandonment of one approach to the exclusion of the other.

For one feature of the psychiatrist's training, the neurologist must assume full responsibility. I refer to what he has forced the psychiatrist to absorb in organic neurology. His responsibility in this connection arises from the establishment of the certification board of psychiatry and neurology. At the time of its formation it was determined that the two specialties were not to be separated and rules were formulated for the basic requirements of certification in neurology or psychiatry, or both. Organic neurology and its basic sciences were designated as necessary for certification in psychiatry, which is, in my eyes, a legitimate condition for certification. I believe, however, that the emphasis has been wrongly placed. It seems to me more important to give the psychiatrist a thorough grounding in anatomy of the nervous system and its physiology, than to expect him to know niceties in the differential diagnosis of nervous disease. Which brings me to what I consider to be the most important contribution of neurology to psychiatry.

Not long ago I engaged in controversy with a psychoanalyst concerning this very problem. I made what seemed to me to be a simple and reasonable assertion, namely, that an understanding of the anatomy and physiology of the nervous system was important to both neurologist and psychiatrist alike. I was told in no uncertain terms that psychiatry is interested in treatment, the inference, of course, being that anatomy and physiology could add nothing to the understanding of mechanisms and treatment. This may be true, but it is certainly debatable. My contention, however, is that something should be known of these subjects in order to prepare the psychiatrist for further advances. It may well be true that a knowledge of the hypothalamus is of no help in defining the phobias or obsessions, but with our advancing knowledge concerning the brain and its connections, new discoveries are being made of which the psychiatrist can ill afford to be ignorant. Wherein can the psychiatrist suffer in knowing what there is to know concerning the role of the hypothalamus in the expression of the emotions? What can be lost by a knowledge of the role of the orbital gyri in emotional problems, or of the cingular gyrus in similar questions? Where is his loss in understanding what the neurologist knows about the structural basis of intellect? Can he afford to neglest what happens to the intellect or to emotional reactions after leucotomy or after the removal of parts of the brain? Is he so satisfied with metaphysical explanations for many of his problems that he can thrust aside without scrutiny what is known about the structural basis of inhibition, or agitation, or of depression? He can ill afford to be ignorant of the structural basis of compulsive laughing and crying, or the reason for mood changes in many forms of nervous system disease. How many psychiatrists are concerned with speech problems such as aphasia or agnosia, yet without this one faculty which distinguishes man from the apes, he would know nothing of his patients. How can he neglest to understand the problems of speech defect and of the relationship of intellect to speech?

These are some of the problems which the psychiatrist must recognize. Advances are being made constantly in neurology which are important to the psychiatrist. He cannot, in my opinion, overlook them or he cannot regard himself as a well-trained psychiatrist. It is the prepared and receptive mind which is capable of advance, and there can be no preparation in the face of rejection. It is this feature of neurology which I should emphasize for psychiatrists. I have had occasion to present some of the material I have mentioned to some of the younger psychiatrists in training, and I have been gratified to have them ask for more. Yet mature and established psychiatrists give it little

attention. I happen to serve on the Dean's subcommittee for veterans' training, one of the early duties of which was to arrange a program for the training of fellows in psychiatry in the Veterans' Administration. An elaborate and beautifully planned course was constructed, with lectures in anthropology, sociology and all the social sciences pertaining to psychiatry. No one had thought of a lecture or lectures on the structural basis of the emotions, but it was eagerly inserted when it was suggested.

All things considered, there should be no controversy between the specialties of neurology and psychiatry unless the psychiatrist is content to be lost in metaphysics. Neurology can help the psychiatrist, but only if those responsible for the training of young specialists recognize its possibilities and are willing to urge him to take advantage of them.

What can be done about the problems which I have raised? Those of you who have had the misfortune to be known either as psychiatrists or as neurologists realize that they are real problems which are very much in the news at the present time. I should like to make a few suggestions which seem to me to be pertinent, in the hope that in the future we may develop an even more skillful group of specialists than we have at the present time.

In the first place, I should insist that psychiatrists in training be given adequate organic background for the reasons which I have tried to develop. It is no secret that neurologists obtain better training in psychiatry, than psychiatrists do in neurology. This is primarily due to the fact that a neurologist in training actually receives a year or more in psychiatry, whereas the only neurology which most psychiatrists receive is often only a quick survey course for the purpose of passing a board examination. If we grant that an understanding of brain mechanisms is desirable, I think it must then follow that a serious study of the structural features of the central nervous system is necessary for good psychiatry. For this purpose, a year's residency in neurology is ideal, but if this is not possible, then I believe that it is the responsibility of those in charge of training young psychiatrists to see to it that some time is devoted to the study of structural mechanisms. The young psychiatrists in training with whom I have had contact have had neither a neurological residency, nor a serious course in neurology. They are content to study psychiatry only, because their preceptors are content to have them do so, largely, I believe, because of a nihilistic attitude toward the possibilities of neurological training.

If it is agreed that such an approach is desirable, we are immediately confronted by the problem of what to offer a psychiatrist in the way of neurological background. He should, in my opinion, have a basic understanding of neurological diseases as such in order to recognize and separate the structural from the psychogenic, and in order also to handle neurological problems adequately. Here I part company with most of my neurological colleagues. Though a knowledge of the natural history of neurological diseases is essential, there are, in my opinion, more important approaches to the training of the young psychiatrist. His organic training should be concerned in large degree with those aspects of neurology which have some bearing, no matter how remote, on his psychiatric thinking. He must be trained in an understanding of cortical and reflex physiology; he should have some knowledge of conditioned reflexes; of experimental neuroses; of the structural basis for the emotions and the intellect; of the effect on the latter of cortical and cerebral ablations; of the deficits induced by leucotomy; and of the pathology of mental disorders. All these can be presented in such a fashion as to combine anatomy, physiology and pathology in such a way as to give the psychiatrist in training a fuller background and hence a richer comprehension of psychiatry. It serves the even more useful purpose of preparing him for advances in his field, and avoids the rigidity so characteristic of most present-day psychiatrists; a rigidity characterized by the conviction that organic neurology can offer little for the understanding of subconscious or unconscious mechanisms.

There must be no cleavage between our specialties and I am particularly happy that you have seen fit to combine both neurology and psychiatry in your new section. I believe deeply that an interchange of ideas between neuropsychiatrists and psychiatric-neurologists can result only in greater mutual understanding and the eventual promotion of greater advances in the two disciplines.

PHLEBOTHROMBOSIS, PRESENT STATUS OF DIAGNOSIS AND TREATMENT

ROBERT A. PRICE, M. D.

PHLEBOTHROMBOSIS is a relatively new medical term meaning the early, quiet, dangerous stage of venous thrombosis. This state is to be distinguished from the late, obstructive, more symptomatic stage known as thrombophlebitis. Phlebothrombosis, as such, may resolve spontaneously and not reach the obstructive stage, it may persist for weeks or months with or without causing embolic phenomena, or it may suddenly cause death by massive pulmonary embolism. Because of this fact, it behooves us all to recognize and treat properly this potentially fatal disease.

ETIOLOGY

Phlebothrombosis is seen most frequently in bedridden patients above the age of fifty, although it appears at all ages when predisposing factors are present. Long periods of inactivity in bed promote a sluggish circulation and venous stasis, encouraging thrombus formation. Changes in blood composition, such as increased platelets, leukocytes, fibrinogen and globulin, which are found in postoperative, postpartem, fracture and septic patients, contribute greatly to the increased viscosity of the blood and thus promote thrombosis.

Most physicians associate phlebothrombosis with postoperative patients, but according to Homans[1] only one-fourth of thromboembolism is found in this group. Approximately fifty per cent of phlebothrombosis cases are medical patients, primarily cardiacs who are inactive because of or as treatment for their illness. The remaining twenty-five per cent constitute the orthopedic and postpartem patients with complicating thrombosis.

The onset of the thrombosis in these cases is below the inguinal ligament in at least ninety per cent of the cases. Therefore our attention should be focused to this region not only to find explanation for sudden pulmonary pain or embarrassment, but to discover cases of quiet phlebothrombosis before embolism occurs.

SYMPTOMS AND FINDINGS

All too frequently the signs of early thrombosis are absent or so minimal that they are not detected by precursory examination. Accordingly a mild or severe *chest pain* with or without dyspnea and hemoptysis may be the initial symptoms of a loosely attached coagulation thrombus in the veins of one of the lower extremities. Allen and colleagues[7] report chest complaints as initial symptoms in 41 per cent of their patients at Massachusetts General Hospital. Frequently such cases, especially when seen in cardiac patients, are improperly diagnosed as coronary occlusion and the vital prophylactic therapy is not administered, often with resulting fatality. Paul White[2] and other investigators[3] have reported extensively on the interrelationship of these two conditions.

Homan's sign (calf pain on dorsi-flexion of foot) is the classical finding in deep venous thrombosis of the legs. However, this sign is frequently absent in subsequently proven cases of phlebothrombosis and may be positive in many unrelated conditions of the lower legs[4] Collins and Nelson[5] found this sign to be present in sixty to seventy per cent of their cases. Meigs and Ingersoll[6] elicited a positive Homan's sign in only twenty-five to thirty per cent of their series. Moses[4] feels that *calf tenderness*, i. e. pain on direct pressure on the deep veins of the calf, is the most diagnostic early sign. Lateral compression is not nearly as painful but is frequently more so in unrelated calf conditions. This local calf tenderness is present in fifty to sixty per cent of reported series.[6, 7] Ochsner points out that the sole of the foot may be the only tender area.

Calf swelling. An increase in the circumference of the calf or of both the calf and thigh of one centimeter or more may be a significant finding. Sixty-seven per cent of a large series[7] had significant swelling. If tenderness and swelling are both present, diagnosis of early thrombosis is imminent. Meigs[6] and associates feel that sudden leg swelling and a positive Homan's sign together are diagnostic of this condition. Certainly any unilateral leg swelling, especially when associated with pulmonic symptoms, pregnancy or pelvic tumors, should prompt investigation into the condition of the venous system.

Temperature, Pulse and Respiration: Any persistent elevation of the temperature, pulse and respiratory rate in a bedridden patient should immediately suggest to the physician the possibility of phlebothrombosis and pulmonary embolism. Some clinics speak of the "Allen sign" which is an increase in the temperature, pulse and respirations with vague leg symptoms, suggesting to the clinician the possibility of a small pulmonary infarct. Ochsner reports that there is often a relative tachycardia in cases of thromboembolism. Such patients may also complain of a feeling of impending disaster and may have had an undiagnosed pulmonary embolus.

DIAGNOSIS

This is readily made in a bedridden patient who has developed sudden swelling of the lower extremity, calf tenderness, a positive Homan's sign and vague chest symptoms. Such a conclusion is reached with greater difficulty if only one or two of these findings are present. Some authorities recommend the use of *phlebography* in such instances, being most enthusiastic about this procedure. Bauer[8] of Sweden employs this diagnostic method frequently and believes it to be almost one hundred per cent reliable. Moses[4] feels that this test is unreliable, especially in the early stages of venous thrombosis. Allen[7] reported that one-third of his cases with negative phlebograms had positive findings of thrombosis at operation. We must conclude then that this technique is only reliable when employed by those who are well trained in its use.

TREATMENT

The reports of numerous investigators[9,10,11,12,13] confirm many advantages of *anticoagulant therapy* over those of surgical ligation of the involved veins. This treatment takes effect quickly and in a vast majority of cases aborts the dangerous complications of phlebothrombosis and promotes early resolution of the pathological changes in the venous system.

Heparin is the quickest acting and most dramatic of the anticoagulant drugs. It was discovered first in the buccal glands of leeches, is now obtained commercially from ox lung. It acts by inhibition of prothrombin in the circulating blood, thus decreasing the thrombin which is required in the formation of fibrin, an essential in blood coagulation. It was employed clinically for the first time in 1935 by Crafoord[9, 11] of Sweden, and Murray[11, 13] of Toronto, both of whom have written extensive reports of its successful use.

Heparin is usually given intravenously as a continuous drip at the rate of 1-3 milligrams per hour, as regulated by the blood coagulation time (Lee and White method), or by intermittent injections[14] of 50-75 milligrams every three or four hours, depending on the response of the coagulation time. Some patients are heparin resistant in the postoperative period, while others are hyperreactors and respond alarmingly to even small doses. Therefore close laboratory control is necessary when this drug is used. Recently Loewe and associates[15, 16] and Evans and Boller[17] have used a preparation of "heparin in Pitkin's menstruum" which is given subcutaneously in 200 to 400 milligram doses every other day. They have found that this preparation successfully increases the coagulation time of the blood to the desired level, i. e. two to three times the normal level. The rare case in which hemorrhage occurs as a result of too rapid heparin absorption can be easily controlled with a transfusion of 250 to 500 c.c. of whole blood.

Because of the expense and the clinical and laboratory observation which is necessary in the heparinized patient, it is usually used in conjunction with *dicumarol,* the heparin being discontinued after the dicumarol effect is evident which usually comes within 48 to 72 hours after the onset dose. Dicumarol is not a physiological substance, is obtained from sweet clover and is relatively inexpensive. It acts by diminishing the prothrombin formation by the liver and does not effect the circulating prothrombin. The onset dose is usually 200-300 milligrams orally, followed by 100-200 milligrams on the second day, and 50-100 milligrams on each day thereafter, depending on the prothrombin level in the circulating blood. The goal is to maintain the prothrombin per cent or the prothrombin time at twenty to forty per cent of normal. Donaldson[25] feels that when the prothrombin time response is twice the "normal reading," the prothrombin content of the blood is reduced to thirty per cent of normal and serious bleeding may ensue. Each day's dosage will depend on the prothrombin determination which is taken and reported to the doctor before the daily dicumarol is ordered. There is danger of hemorrhage if the level drops below ten per cent of normal, and if such occurs it may be counter-

acted by large doses of vitamin K and/or a transfusion[18, 25] of whole blood.

Dicumarol is contraindicated in cases of postpartem hemorrhage, obstructive jaundice and other types of liver disease, blood dyscrasias and in cases of severe renal damage. It has been advocated in cases of coronary artery occlusion and myocardial infarction[18, 27] and apparently does not harm the cardiac patient as was originally believed.

Patients on anticoagulant therapy for phlebothrombosis should at first be on an absolute bed rest regime. Deep breathing and straining at stool should be discouraged as this tends to suck more venous blood and emboli back to the lungs.[28] Exercises in bed and then gradual ambulation should be started as soon as the anticoagulants have demonstrated their activity by stopping the spread of the thrombosis and diminishing the clinical signs and symptoms. Bauer[11] starts his heparinized patients on exercises in bed on the second day of treatment and has them out of bed as soon as the acute symptoms are gone.

Surgical treatment: Ligation of the superficial femoral veins, and at times the common femoral, iliacs or even the vena cava, is advocated by many groups as the treatment of choice or as an entirely satisfactory treatment for phlebothrombosis[1, 5, 6, 7, 19, 20, 25]. This procedure is usually done under local anesthesia and carries with it little or no operative mortality. No case of fatal embolus occurring during or as a result of this surgery has been reported[6].

In most cases it is necessary to ligate only the superficial femoral vein. However, it is not inadvisable to tie off both the superficial femoral vein, and the saphenous vein, if the circumstances so indicate. The common femoral vein is frequently ligated when both the superficial and deep femoral branches are involved. This results in temporary edema of the limb, but this should recede to normal within a year's time "unless a true phlebitis was present"[6], in which case the limb may never regain its normal size. Interruption of the iliac veins or the inferior vena cava may be indicated in cases of pelvic thrombosis, especially if septic emboli are being spread. With these more hazardous procedures, however, increasing morbidity and mortality are encountered.*

After ligation, which is usually bilateral, early mobilization of the patient is advised, even when true phlebitis is found. Exercises in bed may be preferable in some cardiac cases. Evans[22] and Wright[23] suggest that surgical ligation be followed by intensive anticoagulant therapy.

Although controversy still exists between the advocates of surgical ligation and those in favor of anticoagulant treatment, there remain certain cases where surgery is unquestionably indicated. Elderly patients with hip or leg fractures who are being treated by plaster cast immobilization for long periods should be treated by prophylactic superficial femoral vein ligation. Patients with septic thrombophlebitis should have immediate vein interruption proximal to the involved vessels.[23] The advent of penicillin and heparin has materially aided in the treatment of septic thrombosis, but these measures alone may be unsuccessful. In cases where dicumarol is contraindicated and heparin in Pitkin's menstruum is not available, surgical ligation must be carried out.

PROPHYLAXIS

There are men who believe that all phlebothrombosis is avoidable and that the alert physician will not allow his patients to develop this condition.[24] There are numerous methods of prophylaxis which should be generously employed. In *surgical patients* the preoperative reduction of obesity is of undeniable value. Allen[19] reports 458 successful bilateral prophylactic vein ligations in surgical patients above the age of sixty-five at the Massachusetts General Hospital. This practice seems to be particularly indicated in patients with fractured hips and in those undergoing gastric or bowel resection or prostatectomy. The postoperative use of anticoagulants or prophylactic vein ligation in patients giving a history of venous disturbance should be employed. The prenatal correction of varicose veins or the use of compression bandages during delivery should be religiously followed. Ochsner recommends that surgical patients refrain from smoking for one week prior to operation. The recent trend toward early ambulation in surgical and obstetrical cases is a major factor in preventing the formation of loose venous thrombi. Many favorable reports pertaining to this movement are seen in current medical literature.[29, 30] The use of external fixation with rods and bars as treatment of fracture cases, allowing early movement of the involved parts, greatly decreases thromboembolic complications.[31, 32] For the surgical patient who must

* For details of surgical technique, see references 6, 21, 25, 26.

remain in bed, early leg exercises, frequent change of position, adequate hydration, the prevention of increased abdominal tension by discarding the compression dressing to the abdomen are all factors that aid in preventing dangerous phlebothrombosis.

In medical patients where long periods of bed rest appear advisable specific precautions should be taken. Gentle massage, leg exercise, frequent change in position should be employed. Partial ambulation as soon as possible should be instituted. Anticoagulant therapy and/or prophylactic venous ligation are often life-saving measures. The favorable reports now appearing which recommend the use of dicumarol in cases of coronary occlusion and myocardial infarction will undoubtedly do much to abort thromboembolic complications in this condition.

CONCLUSIONS

1. Phlebothrombosis is the early, quiet, dangerous stage of deep venous thrombosis which may cause sudden death in bedridden patients by releasing massive emboli. It is not a purely surgical complication, most often appearing in medical, fracture and obstetrical patients.

2. Phlebothrombosis is characterized by pain, swelling or tenderness in the legs of variable intensity, and in some instances by elevation of the temperature, pulse and respiratory rate. In the usual case only one or two of these symptoms are present, rarely all of them.

3. Treatment should be undertaken with either the anticoagulants heparin or dicumarol, or by surgical ligation of the involved veins, or by both of these methods.

4. Phlebothrombosis may be prevented by early activity and ambulation in the operated patient, by exercises and movement of the bedridden patient, or by the prophylactic use of dicumarol or superficial femoral vein ligations.

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THE Rh. BLOOD FACTOR

BAYLESS CLINICAL LABORATORY

Douglas, Arizona

THE Rh Factor has become the most outstanding discovery in the realm of hematology in many years, and, while it is a relatively new subject, yet it has become of PARAMOUNT issue in the medical profession and in the eyes of the laiety as well.

The symbol Rh is the prefix to designate the presence or absence of a specific agglutinogen in the blood stream, that is, the RED blood cells.

Paper given before the Regular Monthly Meeting of the Cochise County Medical Society.

About one-seventh of the human beings lack this particular constituent.

It received its name from the RHESUS monkey, the Guinea Pig of Landsteiner. It was first discovered in 1937 by Weiner and Landsteiner, reported in 1940, and no medical discovery has become more widely known than the Rh factor in the same space of time with its relation to congenital hemolytic disease and intra-group transfusion reactions. Over 600 papers dealing with this and related subjects have appeared in the few years that have elapsed since it first came to light.

The Rh blood factor is an antigenic substance in the human blood similar to the A & B factors which determine blood groups, and apparently present only in the Red blood cells.

Landsteiner isolated an agglutinogen in the red blood cells of the Rhesus monkey, and later found this same substance in the cells of about 85% of the white individuals. On this discovery hinges all of our Rh problems.

The discovery that the blood of all individuals falls into one of four groups, namely: A, AB, B, or O, made possible the transfusion of whole blood from one individual to another. However, transfusion reactions continue to be a source of no little concern. Various factors, among them the anticoagulant used, the rate of transfusion, the presence of pyrogens, etc., served to explain the occasional REACTION, but did not completely clarify the problem. Landsteiner, Weiner and Levine demonstrated the existence of subgroups and proved them to be possible causes of the occasional post-operative transfusion reaction observed even after careful grouping and cross-matching had been done on blood used.

A transfusion reaction which results from the use of donor blood compatible with the blood of the recipient is caused by the agglutination of the recipient's RED blood cells. A clear understanding of this agglutination process is best obtained by remembering the hypothesis of the original investigators, that is, "the serum of each blood group contains a definite substance called 'agglutinin,' which possesses the property of agglutinating the red blood cells of the other groups." Also, "the red blood cells themselves contain a substance termed 'agglutinogen,' upon which the agglutinin acts to cause agglutination." Obviously, the blood of any given individual does not contain corresponding agglutinins and agglutinogens, as that would lead to isohemoagglutination, a condition incompatible with life.

Modern medical authorities have now accepted the Rh question and the matter of making the anti-Rh test as a routine procedure in all hospital laboratories. This test is compulsory in most obstetrical departments. It is used to classify the blood of pregnant women, to determine as far in advance as possible the probability of Erythroblastosis Fetalis in the newborn child. It is essential to make these tests in all cases of repeated blood transfusions, so as to avoid isoimmunization of any recipient of whole blood. It is generally conceded that no Rh negative female should be transfused with any but definite Rh negative blood, so that there can be no possibility later on in married life of this individual becoming unduly isoimmunized during pregnancy by a possible Rh positive husband.

ISOIMMUNIZATION

Levine has pointed out that the term "isoimmunization" used in connection with these cases denotes immunization within the same species; that is, the individual being immunized and the source of the immunizing stimulus belong to the same species. From this, it is obvious that patients receiving multiple blood transfusions may be subject to isoimmunization. A necessary condition is an antigenic difference in the bloods of donor and recipient; in each case the difference is manifested by the presence of a particular blood factor in the donor and its absence in the recipient. This condition is frequently satisfied in many cases of repeated transfusions; however, immune agglutinins are rarely produced, because many human blood factors which immunize animals are not antigenic in man. There is an exception to this statement, and that exception is the Rh factor, which has been shown to be responsible for transfusion reactions in the Rh negative recipients who, during the course of multiple transfusions, produce in their own serum anti-Rh agglutinins. The Rh factor is a good antigen for the Rh negative mothers as well as for Rh negative recipients.

The clinical importance of Rh isoimmunization concerns two possible dangers: (1) Transfusion of Rh Positive blood into individuals who have been immunized against the Rh antigen, either by previous transfusion or from an Rh positive fetus, is likely to result in serious trans-

fusion accidents; and (2) The Rh positive offspring of a mother whose serum contains anti-Rh agglutinins may present the manifestations of erythroblastosis fetalis.

Indications: The major indications for Rh typing are: (1) to prevent transfusion accidents, and (2) to forewarn against the possible occurrence of erythroblastosis fetalis. In both catagories, determination of Rh type affords an aid in establishing the etiology of the condition should it occur.

ERYTHROBLASTOSIS FETALIS

The syndrome of erythroblastosis fetalis includes a group of related conditions: fetal hydrops, acute icterus neonatorum, and hemolytic anemia of the newborn. According to the hypothesis of Levine, in the typical case the mother is Rh negative, and the baby Rh positive. Due to some defect in the placenta, fetal blood (isoagglutinogen) enters the circulation of the mother, and the isoantibodies produced in the mother pass through the placenta into the fetal circulation. In severe cases, there results extensive destruction of blood cells of the fetus. Levine has concluded that at least 90% of all cases of erythroblastosis can be traced to isoimmunization to the Rh factor. The rest are presumably due to isoimmunization to other factors, or to certain diseases such as syphilis, which favor the transmission of hemolytic substances from mother to fetus.

Not all cases of pregnancy in which Rh negative mothers have Rh positive fetuses result in erythroblastoic infants. The statistical possibility of this Rh relationship approximates 10%, whereas erythroblastosis occurs only once in about 400 births. The chief explanation for the relative infrequency of erythroblastosis lies in the normal impermeability of the placental barrier and in individual differences of mothers in development of an immune response.

The identification of blood groups and types is of great clinical importance from two major aspects:

(1) To avoid transfusion reactions, or to aid in the understanding of hemolytic fetal phenomena; and

(2) By application of the principles of genetics, to aid in medicolegal exclusion of parentage.

In the first category, the group A, B. O characters are most important, since natural agglutinins are present in the serum against these factors, except in Group AB individuals. The Rh factor is next in importance, because it is capable of isoimmunizing Rh negative individuals. It appears to be the consensus of opinion among authorities on the subject that Rh compatible blood be used, even for the first transfusion, and thus avoid danger from future transfusions.

Weiner states in the November, 1945 issue of Journal of Lab. & Clinical Medicine that natural Rh isoantibodies have never been demonstrated in human serum. Therefore, Rh negative individuals can safely be transfused with Rh positive blood, provided that they have not become sensitized to the Rh factor as a result of previous exposure to the Rh antigen. The situation with regard to Rh in relation to blood transfusions is therefore different from that which exists for the blood groups, in which every individual (except in infancy) has agglutinins in his or her serum for those agglutinogens (A, B, or both) which are lacking from the erythrocytes, so that even a first transfusion of an incompatible blood may cause a hemolytic reaction.

Soon after the importance of the Rh factor as a cause of intra-group transfusion hemolysis was pointed out by Weiner & Peters, Levine noticed that intra-group transfusion reactions occurred with exceptional frequency in women who had has stillbirths or infants with erythromblastosis fetalis. This suggested that isoimmunization in pregnancy might be the basis of the latter disease, which Diamond, Blackfan and Baty had previously shown to comprise a number of syndromes, namely, Icterus Gravis, Hemolytic Anemia of the newborn, Hydrops Fetalis, and certain unexplained stillbirths. According to the theory of Levine, an Rh negative woman bearing an Rh positive fetus becomes sensitized to the Rh factor, the Rh antibodies produced by her pass through the placenta into the blood circulation and combine with the red cells, giving rise to one or another manifestation of the disease. In support of this theory may be cited Levine's observation that 90% of the erythroblastic infants have mothers who are Rh negative, while, as already mentioned, only 15% of individuals in the general population are Rh negative. In view of this evidence concerning the nature of the disease, the name has been changed from Erythroblastosis to *Hemolytic Disease* of the fetus and newborn or *Congenital Hemolytic Disease.*

While the mating of Rh negative women with Rh positive husbands occurs in one of ten marriages, congenital hemolytic disease affects only one of about 250 newborn infants. This suggests that only one in 25 Rh negative women becomes sensitized when bearing an Rh positive fetus, just as in sensitization by blood transfusion. The first born is rarely affected, because it takes at least one pregnancy and sometimes more before a sufficient degree of sensitization develops.

In the March issue of the Western Journal of Surgery, Obstetrics and Gynecology, Dr. Don R. Rice, of Portland, Oregon, states that the Rh factor is not a single entity, but can be divided into groups of Rh blood types similar to the standard blood grouping of Landsteiner and Moss. His classification of the Rh Types has been the result of studying the sera of mothers who have just given birth to erythroblastic infants. In studying blood agglutination of many anti-Rh sera, five major varieties of Rh factors instead of only one have been discovered, and these five give rise to eight Rh types of human blood.

And with the properties M, N & P, the subdivisions for human blood have increased to 36. It might appear from this that other "Human-Identifying Factors" will appear, and perhaps Landsetiner's early idea that: "these numerous serological differences in human blood might some day make possible the individual identification of human beings based on their blood reactions, in a manner somewhat similar to the use of fingerprinting," could be a promising theory.

VARIETIES OF Rh

The Rh antigen is not a single uniform substance. At first it was thought to be one specific antigen that was present in the red blood cells of 85% of the white race and absent from the cells of the other 15%. However, three varieties were soon identified and it was learned that a person might have any one, any two, all three, or none at all. The most common variety is the one that was first recognized and is possessed by those 85% already mentioned. It is called Rho. The next most common is found in the blood of about 70% and is called Rh'. The least common is contained in the blood of only about 30% and is called Rh".

With the laboratory methods now available, it *IS* possible to diagnose accurately practically every case of congenital hemolytic disease or to exclude this diagnosis, but at present few laboratories are equipped to classify a blood into its individual Rh type, and we perhaps must of necessity be content to continue with the first and simpler phase of this phenomena until such time as more research work and better techniques bring forth more accurate laboratory results. The great majority of erythroblastotic infants born alive can be saved by transfusions of Rh negative blood or washed maternal red cells. However, no effective method is known for saving infants from the effects of certain hepatic injuries sustained as a result of the disease or hemorrhagic complications. The main problem now is to discover an effective method for treating sensitized Rh negative women so that they are capable of bearing normal Rh positive infants.

The usual laboratory findings on erythroblastosis fetalis (or Congenital hemolytic disease) is an acute hemolytic anemia, including congenital anemia, icterus gravis, and hydrops fetalis. It is characterized by a severe macrocytic anemia, marked erythroblastosis, a hemolytic type Jaundice, Edema, and enlargement of liver and spleen.

The BLOOD PICTURE is:

(1) A severe anemia of the Macrocytic type present at birth, or developing shortly thereafter in contradistinction to simple icterus neonatorum which develops about three days after birth. Erythropenia is a striking feature, the Red cells count being from 1,000,000 to 3,000,000, with an increase of nucleated red cells, along with polychromatophilia, stippling and reticulocytosis increased 15 to 20%. Fragility is variable. Hemoglobin varies from 25 to 60%.

(2) Leukocytosis is marked with myelocytes and myeloblasts. The Platelets may be reduced, especially if purpura is present, in which case Bleeding Time is prolonged, while Coagulation Time is not affected.

(3) The Icterus Index is increased, accompanied by a positive Van den Bergh reaction, usually of the biphasic type, because of damage to the cells of the liver with partial obstruction of the bile ducts. The urine contains bilirubin. The stools may or may not be acholic.

From the laboratory standpoint, the Rh factor has been the No. 1 headache. The tests have given endless trouble in procedure, and often they would persistntly run either all POSITIVE or all NEGATIVE. The techniques were compli-

cated and time-consuming, with end results far too often WRONG.

Certain laboratories, like Gradwohl of St. Louis, produce their anti-Rh typing serum by injection of Rhesus blood into guinea pigs (some use rabbits), while others now are manufacturing serum from the human source. Their directions call for at least a 6% protein concentration, and the tested cells must be suspended in plasma in a 40 to 50% concentration or taken directly from finger blood in the proportions of 2 drops of blood to one of serum.

This new anti-Rh serum, called Anti-Rho Typing Serum (Human), 85%, prepared from immunized human donors, is now on the market and cuts the time down to a fraction of the original. It is prepared in a government licensed laboratory in accordance with the National Institute of Health specifications.

Utilizing the slide-method instead of the 0.4 m.m. capillary tube or Wassermann tubes, the procedure is identical with the blood typing method, which simplifies the process and offers more rapid agglutination. The only accessory required is an Rh Agglutination VIEW BOX, which provides optimum slide testing temperature (45°) and facilitates reading.

Referring to blood typing procedures, many laboratories use only the Anti-A and Anti-B typing sera for determining blood groups, but we feel an added safeguard is met in the use of O serum as well. Should anything go wrong with either the A or B serum, that is, should one serum suddenly lose its titre values, it will be checked by the O serum. However, it is true that at times a patient will have a considerable reaction from whole blood transfusions even after all apparent precautions are taken. These, no doubt, can be due to other reasons than blood incompatibility, perhaps too rapid infusion or allergic reasons, but nevertheless the laboratory should endeavor to use every known safeguard.

Now with reference to certain other agglutinins found in human blood, but which cause no transfusion reaction, let us consider the M & N constituents: Landsteiner and Levine, in 1928, noted that when certain immune sera from rabbits, previously injected with human blood, were exhausted with certain samples of human blood, they still contained agglutinins acting on the majority of blood of all four groups, while other bloods were not agglutinated. Two of the factors demonstrable by these sera were designated "M & N." In other words, they found that the M & N agglutinogens were present in all human blood cells, but no M & N agglutinins were present in the sera. These may be produced by injection of rabbits with this type of cells. Research since that time has shown that all human bloods may be divided into M types, N types, and MN types. Properties M or N do not appear in children unless they are present in the blood of at least one parent. About 50% of the white population are type MN; 30% M; and 20%, N. The agglutinogen M and N are hereditary, just as the other combinations originally described by Landsteiner. The M & N factors are of no importance with respect to blood transfusion work, for the reason that there are no M and N agglutinins in the human blood sera. They are important, however, in medico-legal cases, in questions of determination of paternity and in the identification of blood spots.

AGGLUTINOGEN "P"

The Factor P is also an agglutinogen, but is unrelated to M, N, Rh, A and B. It reacts in the slide test at room temperature but not at body temperature and is strongest at refrigerator temperatures. Anti-P agglutinins occur in normal serum and may be produced by isoimmunization.

As in the case of M and N, "P" does not have corresponding agglutinins for them in the plasma or sera. Consequently, they are of no clinical importance insofar as the first transfusions are concerned. Furthermore, they are low in antigenic activity, so that when the bloods of donors carrying these minor agglutinogens are repeatedly administered to the same individual there is but little or no danger of the latter developing antibodies to them capable of producing serious reactions of the hemolytic types.

RELATION OF Hr TO Rh

It was originally thought that the difference between Rh Positive and Rh Negative cells was the presence or absence of the Rh antigen. This is actually true, although it was later realized that Rh negative cells do not have a "void" in the place usually occupied by Rh, but instead have another antigen filling that position. This antigen was named Hr to indicate that it was related to Rh. It is now believed that there are three varieties of Hr which correspond to the three varieties of Rh. If cells possess only one Rh Antigen, as for instance Rho, they will pos-

sess two Hr antigens. If cells are Rh negative and contain no Rh antigen, they will have all three Hr antigens. The Hr fractions are usually poor in antigenic values and rarely produce antibodies.

The Rh phenomena at best is a confusing subject. So it is very apparent that since the discovery of the sub-groups in Group A & B by Dungern and Hirszfeld in 1910 and of the properties M, N and P in 1928 by Landsteiner and Levine, increasing the number of sub-divisions of human blood from 4 to 36, that some simple nomenclature should be devised to do away with confusing systems now in use. Dr. E. L. Potter, in her thesis on Rh, states: "that the Rh nomenclature is in an unsatisfactory state and little is being done to improve it. No new plan has yet appeared which is completely acceptable, although the majority of the suggestions made have been rational, and any one, even the repeatedly altered original system, would probably be quite satisfactory if it could be universally adopted and changes made only after proper consideration. The 27 types of blood which are theoretically recognizable by the use of 3 anti-Rh and 3 anti-Hr serums must be taken into account in any proposed system of nomenclature."

Very recently, however, "The Advisory Review Board," according to an article appearing in SCIENCE as of January 9, 1948, has concluded that for the present a compromise must be made in the Nomenclature and the two systems—Weiner and Fisher-Race—will have to appear on all the labels of Anti-Rh serums produced for the medical profession. As the Weiner system has priority this terminology is to appear first and the Fisher-Race terminology to follow, in parenthesis. Typical labels would then appear somewhat as follows:

Anti-Rh Typing Serum (human)
Anti-Rho (Anti-D)
Anti-Hr Typing Serum
Anti-Hr′ (Anti-C)

It might be well to make a comparison of the OLD and NEW terminology in order to better understand the changes that have been made in this branch of laboratory work. It is as follows:

The older terminology of the known Antigens is:

rh′
Rho
rh″
hr′

The new will appear as:

C
D
E
c

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Arizona Medical Problems
CONSULTATION AND CASE ANALYSIS

MODERN TREATMENT OF THE BITES AND STINGS OF SMALL DESERT ANIMALS

ARIZONA MEDICINE again presents an unsolved and difficult case from the practice of Arizona physicians, with the Case-Analysis and comments of specially-chosen and nationally-known Consultants.

Any physician who has an undiagnosed case which has defied other methods of solution may send it for consideration. The case should be completely worked up, but an editor will help compose the report. Whenever the need for an answer is urgent, the Consultant's reply will be sent direct to the submitting physician, before publication.

Please send communications and data to Dr. W. H. Oatway, Jr., 123 S. Stone Avenue, Tucson, Arizona, or care of The Editor, Arizona Medicine.

An excited parent may call a doctor for help in such an emergency. Whether the doctor is an internist or allergist, surgeon or psychiatrist, he must do the job if he is the only person available. Whether the causative pest is a scorpion, a rattlesnake, a black-widow spider—or merely one of their harmless, though fierce-looking relatives—is a matter of great diagnostic importance. What therapy to use, and whether it is available, are points to know and remember.

This small symposium may help each M. D. to become his own expert. *The case-analysis is to be made by a panel of Arizonans,* each of whom has had a special interest in the subject for years, either in general practice or research. The group includes physicians, teachers, investigators and, to be even more practical, a well-known pharmacist. The members are:

1. *William Minear,* M. D., formerly of Patagonia and Tueson, now chief surgeon of the Carrie Tingley Hospital, Hot Springs, New Mexico. He has earned five degrees, including an M. D. and Ph. D., and is an American Board diplomate. He is an author (with Dr. Zenas Noon of Nogales) of data on black-widow spiders and arachnidism, and has been interested in the bites of insects and orthropods for ten years.

2. *Melvin Lloyd Kent,* M. D., physician and surgeon of Mesa, Arizona. Dr. Kent has been especially interested in scorpions, and has worked and published in cooperation with Dr. Stahnke on the "Effect and Treatment of Arizona Scorpion Stings."

3. *Herbert L. Stahnke,* Ph. D., Director of the Poisonous Animals Research Laboratory, and Professor of Zoology, Arizona State College, Tempe, Arizona. Dr. Stahnke is author of much information on desert animals, including more than twenty articles in regional and national scientific and popular journals. He is in charge of research and production of anti-venins, a most important service to the southwest.

4. *J. N. Roney,* Ph. D., Extension Entomologist, University of Arizona College of Agriculture, Field Station, Phoenix. Dr. Roney has done reesarch work in entomology at Cornell University, and at both the Texas and Arizona Agricultural Experiment stations since 1927. He is a member of the American Association for Advancement of Science, and of Economic Entomologists. His work has been the dissemination of information to the public, and he is the author of numerous folders and bulletins, including several on scorpions — a subject on which he has worked for the past five years.

5. *William H. Woodin III,* Tucson, is a skilled amateur herpetologist, well-known for his interest on snakes of the Arizona area. He is a member of the A.A.A.S., the American Society of Ichthyologists and Herpetologists, and at present is taking courses at the University of Arizona.

6. *G. Benner Kelley,* F.A.C.A., Tucson, is a well-known pharmacist, past-president of the Arizona Pharmaceutical Society, and a member of the American Pharmaceutical Association and National Boards. He has a detailed knowledge of drugs, and anti-venins, and their whereabouts.

NOTE—The current case has been selected in order to present a subject which is strange to many Arizona physicians, especially those who have arrived here—the differential diagnosis and modern treatment of the bites and stings of small desert animals.

CASE NUMBER VIII

The patient is a white male child, 8 years of age. The mother, in a highly excited state, called the doctor at his home at 7 p. m., April 15th.

About 10 minutes previous to the phone call the boy had been heard to cry out from the patio, and had immediately run to the house, shouting that he had been "bitten" on the ankle. He and the family were quite frightened, since they had only recently come from an eastern state, and had nothing but misinformation on the subject of bites and stings.

Brief questioning revealed that he had gone out, at twilight, to get some toys which were lying on the ground near a play-area and sand-box. He had picked up several, had kicked at a small wooden truck in the grass, and had then suddenly felt a sting on his right ankle. He saw something scuttle in the bushes next to the wall, but could not describe it. There were said to be "marks" on his ankle, but no definite swelling and no general symptoms. No treatment had been used, since they were unable to find the household ammonia which had been recommended by the cook.

It was agreed that the boy be taken at once to the hospital, located half-way between the homes of the patient and doctor. This seemed wise because of the apprehension, and because the hospital was said to be equipped for such emergencies. The doctor then telephoned the hospital, described the situation to the supervisor of nurses, and immediately started for the hospital.

On arrival, and about 30 minutes after the time of the "bite," the patient was examined. The nurse had applied a rather loose tourniquet to the leg just below the knee. The involved area was on the lateral dorsum of the leg, 2 inches above the ankle. There was a slight superficial redness and swelling, possibly because the patient had rubbed and scratched the site. There was a single indistinct puncture wound in the center, but no local discoloration.

The boy was conscious, nervous, restless, but cooperative. He said that the stinging or burning had persisted, and he could feel it "up his leg." The foot felt somewhat numb, a sensation which may have been due to the tourniquet. He complained of feeling "sick," and shortly thereafter vomited once.

The temperature was 100 degrees by rectum; the pulse was flighty, at 100-110 per minute; respirations were 26-30 per minute; a total WBC (reported 15 minutes later) was 16,000; the skin was perspiring but warm; and the blood pressure was 100/70. The reflexes were mildly accentuated, but there was no obvious muscle spasm except where he guarded the leg.

It was noted that he repeatedly cleared his throat, and there was a partial nasal obstruction. (The mother stated that the boy had had a "cold" for two days which she believed was pollen allergy. He was known to be allergic, having had hay fever and occasional asthma; there was a family history of allery. The boy had otherwise been well. He had been immunized for smallpox, whooping cough, diphtheria, and tetanus. He had not been desensitized for hay-fever and the only medication had been the occasional use of "benadryl' 'and "tedral.")

The family reported that no animal, either an insect, arachnid, or snake, had been found after a quick (and probably cautious) search of the patio.

(The case history has been interrupted at this point to allow analysis, diagnosis, recommendations.)

QUESTIONS—

1. What is the most probable diagnosis?
2. What are the differential diagnostic features?
3. How could the case have been better managed in the first 15 to 30 minutes?
4. What is the best therapy at present?
5. How can the various bites and stings be prevented?
6. What assurances can be given to relatives when the various causative animals have been identified?

CASE-ANALYSIS AND ANSWERS

DR. KENT *(general diagnosis and comments):* This case presents an interesting problem in differential diagnosis and, from the material given, there are several possibilities. I doubt that he was bitten by anything larger than a scorpion. I doubt that he actually saw the offender scuttle in the grass. Lack of space does not permit a full differential discussion, so I shall consider only *black widow spider bite and scorpion sting.*

I believe this is a case of scorpion sting and I believe further that *C. sculpturatus is the offender.*

Black widow spider bites occur most frequently on the genitalia. Adults are struck much more often than children. There is little reaction at the site of the lesion. There develops a board-like rigidity of the abdomen, extreme generalized pain. The patient complains bitterly, sweats profusely, is restless and anxious. *Pain predominates in spider bites; nervousness predominates in scorpion stings.* Scorpion stings are more common in Arizona than black widow spider bites.

Between 1929 and 1939 there were more deaths in Arizona from scorpion stings than from any other venomous animal. All scorpions are not equally dangerous and many bites are quite harmless. The reaction depends on the species of the scorpion, the size and age of the patient, the amount of venom injected and the physical condition of the patient. The largest scorpion is not necessarily the most dangerous. Of all Arizona scorpions the small wiry *C. sculpturatus* is by far the most dangerous. The clinical picture given in this case history is compatible with a sting by this creature. It should be mentioned that the "sand-box" has nothing to do with the presence of a scorpion, especially of this type. Sand-boxes are safe places for children to play as far as scorpions are concerned.

The average child stung by C. Sculpturatus will generally exhibit symptoms in about the

following order: He will cry out with pain at the site of the injury, but inspection of the area will reveal little or nothing. An increasing, severe restlessness develops. The child turns and squirms in bed; he may crawl on the attendant, but has no logical reason for so doing; he pays no attention to those about him. In severe cases the abdominal muscles may become rigid; cynosis appears; respiration becomes wheezy and difficult; there is drooling of saliva, incontinence of urine, and the temperature may reach 103-104 degrees. If the patient survives he will probably be symptom-free in twelve hours or less, with the exception of a numbness at the site of the sting which may course centrally from the site and last for several hours or days.

Treatment—Most cases of scorpion stings are not serious. However, no scorpion sting should be ignored by parents, especially if a baby or young child has been stung. A physician should be consulted at once, and the physician should not ignore it either.

As a first aid measure, a well-placed tourniquet should be placed above the site or injury and an ice-pack should cover the site. In most cases further treatment need consist only of watchful waiting or be limited to mild sedatives and encouragement. However, if the patient was stung by C. sculpturatus, serious trouble may be encountered. There should be plenty of fresh air; the victim should not be rigidly restrained; morphine should not be given, since it is ineffective in adults and outright dangerous in children. In our hands the drug of choice has been barbiturate, generally in the form of sodium luminal; the dosage is large and *text book doses should be ignored*, since they are much too small The amount given varies but should be large enough to control the symptoms even though the attendant has to call on his reserve courage to administer it. As in black widow spider bites, mag. sulfate and curare are said to be effective; I have had no experience with them. I believe that in the not too distant future an effective antidote in the form of anti-venom will be available from the laboratory of Dr. Stahnke.

DR. RONEY (*scorpions*): It would seem that the injury was caused by a scorpion, or a similar specimen. It is almost certain that it was not a snake, or that the child fell and injured himself. It is apparent that something struck quickly, and then hid itself easily. Scorpions infest just such places as are described in this case. A scorpion hides under boards or objects such as the toys, and when any person crosses its path or interferes with its location, it will strike. Evidently the boy stepped directly where the scorpion had been playing, and the result was the sting.

The description of the swelling, and the effect which the sting had upon the young fellow also indicate that it was some type of scorpion. He was conscious, though restless and nervous, and noted a stinging and burning, all of which are suggestive that it was a scorpion-sting. The nasal discharge and tightening of the throat, manifested by a constant clearing of the throat, are possible further evidence of toxicity caused by a scorpion.

The family should have immediately packed the child's ankle in ice and kept it packed in ice during the time they were transferring him from his home to the hospital. If this had been done immediately after he complained of an injury of this nature, there possibly would have been very little soreness or other ill effects from the sting. In general, if a doctor has not been called and if no swelling has occurred at the end of one hour, it is probably a deadly-poison type of scorpion that has inflicted the sting; one should then keep the ice pack on for several hours, and if the person is less than 10 years of age or is troubled with a heart ailment, a doctor should immediately be consulted. Continued application of ice slows the spread of toxin from the involved area.

The exact mortality rate of untreated scorpion sting is not known, but there have been 43 deaths from it in Arizona in the past 10 years. The mortality in cases properly treated with specific anti-scorpion serum has been zero. At present its use is experimental and restricted. (See the discussion of pharmaceuticals.)

Scorpions may be avoided around the house by keeping sticks and other debris picked up, and also by keeping the grass cut at all times. The spraying of the entrances to the house with 5% DDT solution (in a highly refined kerosene which is usually stainless and almost odorless) and the use of 10% DDT powder in the attics will eliminate many scorpions.

DR. MINEAR (*concerning diagnosis, arachnidism, and therapy*): The clinical symptoms and the presence of a single puncture would fit

in very well with a scorpion sting. The bees, wasps, velvet ants, certain varieties of true bugs with sucking mouth parts, and mosquitos also produce a bite with a single puncture wound. The ants, centipedes, tarantulas, and spiders produce double puncture wounds.

I would not recommend a tourniquet for first-aid treatment in this case. Toxin from a scorpion bite travels rapidly via lymphatic channels. An ice-pack applied to the bite by means of a bandage slows down the absorption of the toxin and alleviates local discomfort. The patient should be under constant medical observation and be treated symptomatically. Allergic individuals should be treated with anti-histimine drugs. There is an anti-venin for the scorpion bite, which is considered effective; I have had no experience with it.

The venom of certain types of scorpions is more toxic than that of others, and *the amount of toxin* injected by the scorpion differs. For example, a scorpion that has recently stung several animals will probably inject a smaller amount of toxin into the third or fourth animal than into the first. Toxin injected into a tough skin has less chance of absorption than that injected into a thin skin.

Symptoms differ widely in different people. Some healthy adults suffer only minor discomforts, including sensations of numbness. It is generally thought that infants and debilitated aged people are poorer risks than healthy adults.

Bites and stings can only be prevented by avoiding the animals. This is best done by knowing their habitats and habits. Parents and school authorities should carefully inspect children's play ground areas for various noxious insects, bugs, arachnids, scorpions, and reptiles, and eliminate these offending creatures. *The Black Widow* has a round black body, about half an inch in diameter, with a red hour-glass pattern on its abdomen and a leg-span of two inches. It would not commonly be found in the circumstances of the present case.

The lesion inflicted by the black widow spider is insignificant. It often shows as a small reddish spot with slight local swelling. The patient may complain of slight itching at the site, but more frequently there is a sharp stinging pain. This pain spreads to the extremities in 30 to 60 minutes, and then to the abdomen in 1 to 2 hours. In a typical case the pain becomes excruciating, and is frequently accompanied by nausea and vomiting. Characteristically there is extreme anxiety and restlessness. There often is respiratory difficulty, accompanied by an expiratory grunt. Except for the pains in the extremities the patient presents a picture which superficially resembles the acute surgical abdomen. The pulse may be slow or fast. The pupils usually are moderately dilated and react to light and accommodation. There may be a slight elevation of temperature. There is a board-like rigidity of the abdomen, with some tenderness. The reflexes are slightly hyperactive. The blood pressure may be elevated as much as 40 mm. of mercury. The spinal fluid may be under considerable pressure. The white count gradually rises and remains elevated for several hours. (Details of treatment are to be found in the comments by Mr. Kelly. *There is no similarity* between Case No. VIII and the typical syndrome of the black widow bite.

MR. WOODIN (*snakes and other small nocturnal desert animals*): The case may be analyzes by answering the questions which have been asked.

Questions 1 and 2—The time of day of the bite, as well as the time of year, is of little significance, owing to the fact that most of the poisonous "animals" are abroad after sunset, many being diurnal as well. This factor, however, would *lessen the possibility* of a bee or wasp sting. Secondly, the circumstances and site of the bite point to an animal capable of delivering a swift bite or sting on a rather flat vertical surface and then making a fast departure (or an animal small enough to remain unnoticed). This, together with the general symptoms, would probably *rule out* the tarantula, centipede, black widow, Gila monster, and coral snake. The position of the bite, several inches above the ground, may be of some significance although it is conceivable that the animal in question was sitting on the truck and thus gained the necessary elevation. It would be useful to know whether the child was wearing trousers of sufficient length to cover the site of the bite. (ED.: He was not.)

At first glance, the location of the bite two inches above the ankle would seem to *favor* the probability of *snake bite*. The single puncture I do not consider significant, as frequently in snake bite one fang only is involved. A very small amount of venom might be injected by the bite of a small rattlesnake, sufficiently young that the sound of its rattle would be negligible

or non-existent, or follow the penetration of only one fang due to poor aim or the interference of clothing. Even in such a case, however, I feel sure that *considerable local swelling* would quickly ensue, though the abrupt original sensation of severe pain would probably soon disappear. The bite from a coral snake as stated before, or even from one of the mildly poisonous rear-fanged species such as the lyre snake, while it might result in symptoms more nearly similar to those described, seems very *unlikely*. The rear-fanged snakes require a good bite and generally some chewing to bring their grooved teeth into play, and generally inoffensive behavior, renders a bite such as the one described *highly improbable*.

The absence of any considerable swelling together with the boy's feeling sick and the sensation "up his leg" might indicate a rather neurotoxic venom, such as I understand is carried by the more dangerous varieties of *scorpions*. Certainly a very small amount of venom was injected; perhaps this would indicate a young scorpion.

It must be remembered that the extreme *fear and nervousness* of the average uninformed person in a case such as this are very important factors. If the scuttling in the bushes may be explained by imagination or even by the movement of some innocent animal, the sickness of the boy ascribed to his mental state, and varying individual susceptibility taken into account, then the bite of a common red ant, aggravated into action by the sudden kick, might result in just such a continued burning and comparative lack of swelling as described, as well as adequately explaining the position of the bite. Even a cactus thorn, driven deep into the flesh by the force of the kick, might produce a painful wound although the tip would probably remain imbedded; at any rate the presence of a cactus in that part of the patio could be quickly ascertained.

In view of the above considerations, *a scorpion or red ant seems to be the most likely culprit*.

Questions 3 and 4. How could the case have been better managed in the first 15 to 30 minutes? *Valuable time must not be wasted* in applying so-called household remedies, including internal application of whiskey, external application of strong potassium permanganate or kerosene, or cauterization. A thorough and immediate search of the locality should have been conducted to determine if possible the guilty animal. Meanwhile, if the symptoms warrant it (especially severe pain or rapid swelling), certain *first aid measures* should be applied. These include application of a tourniquet a short distance above the bite; incisions at the puncture and over the swollen areas, together with suction applied by mouth or otherwise; and keeping the patient quiet and his courage up. These measures are a "must" in the case of snake poisoning, but not essential for other bites. If applied immediately, suction often helps relieve pain in the case of other bites and stings. Antivenin, if handy, should be given for rattlesnake bite (according to the directions), but if a doctor is nearby, this and any extensive cutting should be left to him. I believe that packing the area or limb in ice is recommended here. (Further data on anti-venins are given in the section on pharmacy.)

Question 5. Bites and stings may be prevented by ordinary common sense, which consists of watching where the hands and feet are placed, taking care when overturning objects, and carrying a flashlight at night. Knowledge of local poisonous animals is essential; with knowledge, fear and the likelihood of hysteria or shock diminish. One should be able to identify the venomous snakes, the Gila monster, the black widow, and the more dangerous varieties of scorpions.

Question 6. The relatives, and especially the patient, may be assured (in the case of snake poisoning) that for a number of reasons only a small amount of venom may have been injected; that except in unusual circumstances the chance of survival even without treatment are excellent; and that with proper treatment the odds in favor of the patient are very great. These points would also apply to bites by the other animals.

DR. STAHNKE (*other arthropods and insects; general therapy*). The condition is *probably not caused by any of the less venomous arthropods*, such as the centipede, the Arizona tarantula, the solpugid, vinegarroon, or a blister-beetle. It is also *not due to an insect* such as a bee, wasp, or red ant. *It would seem to be due* to one of the more venomous arthropods — *a scorpion* or *a black widow spider*—or less possibly to *a rattle snake*.

Bees, wasps, and red ants are only mildly toxic for humans, except for rare individuals with a

specific allergy. The effect is usually localized to the area of the sting, and a large, slightly swollen, discolored area may be produced. The coloration is due to hemorrhagic toxins, and the area may become black, blue, or purplish in four or five hours. At times it may disable the victim for days. An unexplained but effective therapy is the liberal local application of liquid household bluing, which will stop the lesion at any stage. Because of the circumstances at the time of the attack, the scanty local swelling and the progress of symptoms during the first hour in the present case, *these insects would seem to be ruled out.*

Centipedes may be excluded for the same reasons. Their toxic effect is slight, it is mostly local, and the prognosis good. A small green variety (scolopendra morsitans) causes a mild swelling, but the longer (6-8 inch) yellowish brown type (s. heros) may cause serious swelling, discoloration, and occasionally result in an ulcerated wound which may require weeks to heal. Their front pair of claws form fangs, they cannot bite efficiently, and their waxy, articulated body moves with only moderate speed. The *millipede*, or "thousand legger," should not be confused with a centipede. It is a cylindrical gray creature, and is non-poisonous. They are often seen after a rain, curled up on the ground, and give off an odor of phenol.

The large Arizona *tarantula* (as contrasted to the smaller Central American type) is unnecessarily feared. It could fit into part of the circumstances of the present case, since it is nocturnal, bites the extremities, scuttles like a large (2-3 inch) hairy black spider on the turf or wall, but it is almost non-toxic. The bite is produced by a pair of fangs on the anteroventral surface, and a local swelling occurs which may become secondarily infected. A cleansing of the wound, followed by an ice-pack, comprises the therapy.

The *Gila monster* is also unduly feared. It could not be a factor in the present case. It is quite rare, living in desert washes or in the foothills, where it can be away from the sun among the boulders. It does *not* jump, is sluggish, and moves quickly only for short intervals. It is shy and retiring, and only bites aggressors. It has no fangs, bites with its teeth, must obtain a good hold, and must hang on (preferably upside-down) for several minutes. The venom apparatus is a poor one, since the venom comes from modified salivary glands and must travel along capillary grooves in the teeth. The venom is a neurotoxin, and can be slowly fatal through cardio-respiratory failure. Finally, the animal must be at least 18 inches long to produce a hazardous amount of venom.

The true *vinegarroon* (called "vinegarone" or whip-scorpion) is very rare, found only in southeastern Arizona, and is entirely non-toxic. It gives off a pungent vinegar odor.

The *solpugid* (called sun-spider, sun-scorpion, wind-scorpion, or, wrongly, vinegarroon) is also non-toxic, but may bite and produce a secondary infection. It is straw-colored, has eight legs radiating from its body, is fierce-looking, but is harmless. It has jaws, but no stinger or pinchers such as true scorpions possess.

Blister-beetles would not fit the present picture. They are small (1-2 cm.), look somewhat like black cock-roaches, and are difficult to locate. There is rarely a consciousness of being bitten, and the large blisters appear on a non-inflamed base without warning. The blister is caused by the corrosive action of the beetle's blood; if the beetle is pressed against the body, blood may ooze from the leg joints onto the skin.

An *Assassin-bug* could also be excluded as a cause. It produces a low local swelling and inflammation up to 10 inches in diameter, with occasional nausea, vomiting, and faintness. They are also called Mexican bed-bugs, kissing-bugs, Hualpai Tigers, China bed-bugs, corsairs, etc.

If there is swelling in 15 to 20 minutes, one can safely assume that the venom was not that of the scorpion or Black Widow spider.

I would like to insist that the possible presence of a dangerous scorpion has nothing to do with the nearness of a sand-box. Children should not be deprived of a sand-box because of this false association.

Suggestions for management of a case like the one described might include—

1. Calmness and assurance.
2. An immediate attempt to find and identify the animal. (This is very important.) Long-time residents, gardeners, etc., are usually able to help with the identification.
3. *Begin treatment at once.* This is aimed to reducing the spread of toxin from the local area, decreasing pain, and for psychother-

apy. Our technique has recently been modified. If the sting is on an extremity:

a Apply a tight tourniquet between the sting and the torso.
b Place a piece of ice on the sting, and
c Prepare a pan of iced-water. *Do not use salt* in the water.
d Immerse the hand or foot in the iced-water.
e After 5 minutes, remove the tourniquet.
f Keep the extremity in the iced-water for 2 hours.

Little or no advanced reaction will follow this routine.

4. Talk to a well-qualified physician if possible. *Put the patient in his care:*
   a If the patient is less than 5 years of age.
   b If the patient has been stung in a number of widely distributed places.
   c If the patient has been stung on the genitalia or a vital area of the head.
5. *Before taking the patient to medical aid,* place a pack of crushed ice on and around the site of sting, covering an area 10-12 inches in diameter. One ice-cube has an insufficient effect. Leave the pack on in spite of other treatment for 2 hours. *This therapy applies to all cases where the patient has been bitten or stung by some unknown creature.*
6. Use specific anti-venin for black widow, scorpion, or snake bite, first testing for sensitivity. Treat otherwise as indicated by the diagnosis.

MR. KELLY *(therapeutic methods and drugs)*: The "animal" which was responsible for the bite would seem to be a scorpion, a black widow spider, a snake, or one of the mildly-poisonous varieties of small animals or insects. Only the first three present a real hazard.

It is most important that a doctor be called at once, in order that the identity of the cause can be discussed and a course of action decided upon. The family was fortunate in the present case.

Therapy may be classified as *first-aid, supportive* or *specific.*

1. *First-aid* measures include those used at once, before medical aid arrives. They may be all that are necessary.
   a *Local applications* may be used. They have two purposes — to neutralize the probably acid poison (most authorities believe they have a limited value; an alkali, such as ammonia water or vinegar, is used); and to prevent the spread of toxin in the tissues (an ice-pack is applied over the bite).
   b *Evacuation of the toxin* by local incision. This should be done before the doctor arrives *only* if medical help is distant, if a snake is the known cause, or if snake bite can not be ruled out. A single incision over the bite (using a clean razor blade or lancet), followed by suction 15 minutes of every hour until the symptoms subside, may be of value. A suction-cup is to be preferred to mouth-suction; the anti-venin syringe is constructed so that it may be reversed and used as a suction-cup.
   c *A tourniquet* may be indicated in the same circumstances. The band is applied between the bite and the body, and the pressure is loosened for half a minute every ten minutes to prevent gangrene. A first aid "Snake-Bite Outfit" (Becton-Diokinson Co., etc.) should be kept at hand in rural homes, camps, cabins, and on trips. It retails for $1.50, and contains a tourniquet, a lancet, an "Asepto" suction-cup, and an iodine applicator. Whiskey or other drugs have no part in first-aid treatment.
2. *Supportive* therapy is in the province of the doctor, and its use depends upon the causes and symptoms. It may include sedatives, cardio-respiratory stimulants, and intravenous fluids for shock. These materials are available at all hospitals and pharmacies.
3. *Specific* therapy is indicated only for the "big three" (snake bite, scorpion sting, and black-widow bite); it is usually urgent only for snake bite. Anti-venins are manufactured for each of the three conditions named. Patients to whom anti-venin is to be given should be tested for sensitivity before full doses are used. In general one should give more than enough anti-venin rather than too little.
   a *Snake-bite anti-venin* is a "group" preparation, effective against the toxins of rattlesnakes and other viperine snakes, but not against coral snake venom. It is called "North American Anti-Snake-

Bite Serum." The Wyeth preparation "Anti-venin (nearctic crotalidae) Polyvalent," consists of an ampoule of 15 cc. of "restored serum," and retails at $12.50.

The new "lyovac" preparations can be stored in refrigeration. It is considered a "good adjunct" in therapy, but may be of little help in a bad bite. It is never too late to begin its use, however. Several ampoules are usually given, and as many as 15 if the toxic effects of the bite become general. Oddly, a child usually requires more than an adult. The serum is given intramuscularly above the tourniquet, and in and around the site of the bite; after it is given locally into the bitten area, suction should be discontinued for an hour, and the tourniquet may be removed. Coral snake-bite is rare, and there is no specific anti-venin. It is said that the polyvalent material described above has been used, and with good results.

b. *Black Widow Spider Anti-venin* is specific for the bite of that spider only. The Sharp and Dohme preparation (Mulford Labr.) consists of 2.5 cc. of "restored serum" in an ampoule retailing at $6.00. The mortality without specific serum has been listed at 5 to 11%, including those cases treated with intravenous calcium gluconate or magnesium sulfate, barbiturates, etc. The mortality in cases treated with one ampoule of the anti-venin has been found to be zero, and the morbidity is remarkably reduced. A skin-test for sensitivity should always be done, —0.02 cc. of a 1:10 saline dilution of normal horse serum should be given intradermally. If the test is positive in ten minutes, try a conjunctival reaction test. If the ID test is negative, use the anti-venin; if the ID test is positive and the eye test negative, desensitize the patient; if both are positive, avoid the serum.

(Both the snake and spider antivenins have a 5-year expiration date, and must be discarded at that time. Neither may be returned to the manufacturer for exchange or credit. Pharmacies carrying these products do so in the interest of public health.)

c. *Scorpion Anti-venin* is now being made in Arizona, but it is not yet available for for general use. Dr. Stahnke of the Poisonous Animals Research Laboratory is working with a rabbit serum, but its use is still experimental and only under his guidance. It has been very effective; sensitivity has not been a factor; an announcement may be expected soon.

A Mexican anti-scorpion serum has been used by Arizona physicians with good results for several years. It is not stocked, generally, and is not officially approved (A.M.A.), but it may be obtained from the Institute of Hygiene of the Department of Health, Popotla, Mexico, D. F.

Pharmacy and hospital depots for anti-venin will have to be determined by local inquiry. In general, hospitals may stock the materials, but are reluctant to give out the information; the larger pharmacies carry the snake and spider anti-venins; the two major wholesale drug companies (McKesson & Robbins in Phoenix, and Brunswig in Phoenix and Tuscon) supply most of the Arizona drug stores; they both carry the snake and spider anti-venins.

Prevention of bites and stings may be aided by the use of chemicals, all of which can be obtained at any pharmacy. D.D.T. is a most effective scorpion-eliminating drug; it is best prepared as a 5% refined kerosene solution, remains effective for 6 weeks, should be re-applied at intervals from May to September, and it kills shortly after any contact with the scorpion. D.D.T. is of no value against black widows, but an oil spray of pyrethrum is said to be very effective.

Anti-histamine drugs are readily available by prescription (including benadryl, pyribenzamine, neo-antergan, thenylene, etc.). They may be used as a treatment for itching (Parke, Davis & Co. suggests this in correspondence, though reports on insect bites are scanty at present), and for the occasional late allergic effects of serum treatment.

In general, the picture is bright for quick and effective treatment of all sorts of bites and stings.

MISCELLANEOUS SECTION

Arizona Society of Anesthesiologists

The Arizona State Society of Anesthesiologists was organized May 20, 1948 in the course of the annual meeting of the Arizona Medical Association. The new society took form at a gathering of the Phoenix Society of Anesthesiologists, which had been organized in April of this year.

Dr. Benjamin Herzberg of Phoenix was named president, with Dr. Maxwell R. Palmer of Tucson as vice president and Dr. Audrey G. Urry of Phoenix as secretary-treasurer. In the Phoenix society, which will function as a chapter of the state group. Drs. Herzberg and Urry hold the same offices, respectively, and Dr. Paul Causey is vice president.

The purpose of the state group is to associate and affiliate into one organization all reputable doctors of medicine in Arizona who are engaged in the practice of, or otherwise interested in the medical specialty of anesthesiology for the general elevation of the standards of medical practice.

Scientific programs will be presented at least four times each year, at which out-of-state speakers as well as Arizona physicians will be heard.

Charter members of the organization are:

Mabel I. Adams	Phoenix
Louise Bewersdorf	Phoenix
Frederick Baier	Phoenix
Paul S. Causey	Phoenix
Wiliam H. L. Dornette	Chandler
George DeYoung	Tucson
George Enfield	Phoenix
Dudley Fournier	Phoenix
Benjamin Herzberg	Phoenix
Paul Jarrett	Phoenix
Martha Lewandoski	Phoenix
Robert Maresca	Phoenix
Maxwell R. Palmer	Tucson
Wallace Reed	Phoenix
John J. Rupp	Tucson
Maurice Stern	Phoenix
Audrey G. Urry	Phoenix

A charter is being applied for so that this state society may become a component of the American Society of Anesthesiologists, Inc.

Office of the Surgeon General

CHLOROMYCETIN IN THE TREATMENT OF SCRUB TYPHUS

The antibiotic Chloromycetin was described in 1947 by Ehrlich and his associates. It has been shown by Smadel and Jackson to have a beneficial chemotherapeutic effect when administered to mice or embryonated eggs infected with a number of rickettsial agents or with several viruses of the psittacosis-lymphogranuloma venereum group. The drug is rapidly absorbed when given by mouth to human beings, and readily reaches concentrations in the blood of the order of 40 gamma per cc. No obvious toxic effects attributable to the drug have been observed in the normal men or the patients who have been studied to date. A preliminary note describing the encouraging results observed in a few cases of epidemic typhus who were treated with Chloromycetin early this year in Mexico has been submitted by workers from the Army Medical Department Research and Graduate School and the Institute Salubridad y Enfermidades Tropicales.

Twenty-five persons with scrub typhus were treated with Chloromycetin during March and April of this year. The Chloromycetin used in the work was supplied by Parke, Davis and Company. Each of the patients presented clinical features of the disease. Furthermore, the diagnosis was proved in each instance by recovering *Rickettsiae tsutsugamushi* from the blood taken prior to treatment or by demonstrating the development of agglutinins for the OX-K strain of *B. proteus*. Rickettsemia occurred in 20 of the 25 patients, and a positive Weil-Felix in 24 of the group.

Eighteen of the treated patients were males and seven, females. Their ages varied from 19 to 55 years with a mean of 33.1. Treatment was begun on the third day of illness in two instances and on the eleventh in one; the mean value for the day Chloromycetin was started in the 25 patients was 6.2. The mean value for the last

Read before the Fourth International Congresses on Tropical Medicine and Malaria, held at Washington, D. C., May 11, 1948, at 11:00 a. m.

febrile day of illness in the treated group was 7.5. The shortest period which fever persisted after beginning treatment was 10 hours and the longest 96. The average duration of fever after the first dose of drug was 31 hours.

None of the treated group developed complications or died. One patient who received Chloromycetin on the third day was discharged from the hospital for light work on the ninth day after onset. The first patient in the group was held for observation in the hospital for 28 days. The mean period of hospitalization for the group was 19.2 days.

Twenty-two of the 25 treated cases derived their infections from exposures in areas within a radius of 20 miles of Kuala Lumpur. Eleven of the twelve untreated cases of scrub typhus who were observed during the period also contracted their disease within this general area. Indeed, five of the twelve controls became infected while working in precisely the same spots which provided 14 patients of the treated group. Hence, one may assume that the strains of rickettsiae which infected the treated and control groups were fairly comparable in virulence. The test and control groups may also be assumed to be comparable as regards capacity of the individuals to overcome infection with *R. tsutsugamushi.* Thus, the age distribution among the two groups was similar and the mean age of the twelve male controls was 33.8 years. Furthermore, the distribution of Europeans, Malays, Indians and Chinese among the controls was similar to that of the treated group. The sharp contrast in the clinical responses of the two groups is clearly evident from the tabular data. It will be seen that the mean duration of fever in the control group was 18.1 days; that two patients developed serious complications, one of which proved fatal; and that the average period of time spent in the hospital was 30.7days.

All 25 patients in the treated group received an initial oral dose of approximatetly 50 mg. of Chloromycetin per kilo body weight, and were subsequently given 0.2 to 0.3 gm. of drug by mouth every two to four hours for a variable time. During the early part of the present work, treatment was continued until at least the 12th day after onset; these patients received totals of 8 to 15.5 gms. of drug. The duration of treatment was gradually shortened, and the last seven cases were given the drug for only 24 hours; these received a total of about 6 gms. during this period. Their responses with this short regime were as satisfactory as with the longer periods of therapy.

Determinations of the amounts of drug present in the bloods of these patients have not yet been made because of technical and supply difficulties. It is of interest that Chloromycetin can be employed successfully without dependence upon the results of such assay techniques. The practicality of the use of Chloromycetin is further emphasized by the fact that 12 of the 25 patients were treated in estate hospitals where conditions are no more favorable for complete nursing care than in the average private home in the United States.

CONCLUSION

Chloromycetin is highly efficacious in the treatment of patients with scrub typhus. It is simple to administer, and has not been found toxic for man.

PENICILLIN NOT PROVED BEST FOR BABY'S EYES, MEDICAL JOURNAL HOLDS

New York, April 23, 1948—Penicillin has not yet been shown to be superior to nitrate of silver for use in the eyes of the newborn as a guard against infection, and its use without further experience would be a "calamity," the New York State Journal of Medicine asserts in an editorial in its current issue. The pubilcation is the official organ of the Medical Society of the State of New York.

An article in a recent issue of a popular woman's magazine (Woman's Home Companion, April 1948) claimed that babies are often rendered blind by the use of nitrate of silver as a prophylactic because the law in many states compels its employment by physicians. This disaster, according to the article, could be avoided by substituting penicillin for nitrate of silver.

"This is by no means proved," the Journal editorial comments, "and it would, in our belief, be a calamity if a tried and certain method were discarded without further experience with another which has by no means been shown to be superior. Perhaps there is a substitute which causes less reaction than silver nitrate, but we had better know more about that before the claim of infallibility is disseminated."

A world-wide acceptance of the use of a dilute solution of silver nitrate followed the introduction of this method to prevent gonorrheal infec-

tion in the newborn by Crede, German gynecologist, the editorial points out. It acknowledges that some failure is possible, due to carelessness or forgetfulness or improper application by the attendant at childbirth. The sanitary codes of most American states and cities require the prophylactic instillation of silver nitrate or, as in the case of New York City, "an equally effective agent."

The Journal editorial points out that a special committee of the New York Academy of Medicine, named in response to a request from the New York City Commissioner of Health for an opinion as to the desirability of changing the Sanitary Code to accept penicillin as a substitute, did not recommend any change, although it did suggest that hospitals, under adequate control, be encouraged to make further studies.

"The Special Committee of the Academy considering the problem," the Journal states, "include in its personnel an ophthalmologist, a pediatrician and an obstetrician. Their opinion that the use of silver nitrate should be continued, pending the further study of the value of and practical considerations relating to the use of penicillin, prescribes a tried and proved remedy in the use of which professional personnel have been trained over a long period of time."

"Mention must be made of the fact that ophthalmia in infants is not necessarily gonorrheal," the Journal comments. "There may be other organisms involved — streptococci, staphylococci, pneumococci, coliform organisms, and viruses. Many of these are strains resistant to penicillin. Proof of the effectiveness of the latter does not, up to the present, appear adequate. Moreover, the most effective concentrations and the best method of application have yet to be determined. Solutions must be fresh, and several instillations are required. In unskilled hands it may not be so simple as a single instillation of silver nitrate for prophylactic administration."

United States Atomic Energy Commission

Isotopes Division, Oak Ridge Operations
Oak Ridge, Tennessee

Isotopes Division Circular E-18

DISTRIBUTION OF CERTAIN RADIOISOTOPES WITHOUT CHARGE FOR USE IN CANCER RESEARCH, DIAGNOSIS AND TREATMENT

We are pleased to announce that the isotopes distribution program in the United States will now include distribution without charge, except for handling and transportation, of certain radioisotopes useful in therapy, diagnosis, and research in cancer. This plan should result in considerable savings in costs of treatment and cancer investigations using radioisotopes.

Effective April 1, 1948, all production charges (list prices) will be removed from the following when the materials will be used for the study of cancer—its nature, diagnosis and treatment:

Isotope	*Catalogue Item No.*	*List Price*
Iodine 131	S-2	$ 1.70 per millicurie
Phosphorus 32	S-3	1.10 per millicurie
Sodium 24	73	12.00 per irradiated unit

Handling charges to cover the cost of packaging, monitoring, accounting, and billing will be $10 for the first shipment and $10 for each subsequent shipment. Transportation charges will be paid by the applicant.

These radioisotopes may be obtained under present procedures by submitting an "Application for Radiosotope Procurement," Form 313, to the Isotopes Division. The statement of use should be complete in order to justify issuance of "Authorization for Radioisotope Procurement," Form 374, with the provision that your investigation is concerned with cancer research, diagnosis or therapy and that no charge will be made for materials.

Other available radioisotopes useful in the study and treatment of cancer may be added to the above list as it is determined that they can be supplied on this new basis. You will be notified of any further additions to this list.

FEDERAL SECURITY AGENCY
U. S. Public Health Service
Washington, D. C.

Recent cases of poisoning from thallium used in rodenticides, and requests for information from public health agencies and private physicians, have resulted in the reprinting of a limited supply of "Thallium: A Review and Summary of Medical Literature," Supplement No. 197 to the Public Health Reports, weekly scientific publication of the U. S. Public Health Service, Federal Security Agency.

The Army, Navy and Public Health Service used the pamphlet during the war, when it was prepared at the request of the Committee on Insect and Rodent Control of the Office of Scientific Research and Development.

Among the subjects covered in the review are the history of thallium, its source, properties and uses, toxicologic properties, thallium poisoning in humans, and the therapy of poisoning by the chemical. The author lists 298 sources of information from the medical literature of Belgium, Canada, China, France, Germany, Great Britain, Italy, Japan and other countries. as well as the United States.

Oral administration of 35 milligrams per kilogram of a soluble compound of thallium is lethal for rats, the author cites one authority as claiming. Rodenticides containing thallium also have been used successfully in exterminating prairie dogs and ground squirrels.

Accidental swallowing of thallium-treated food intended as animal poison is one of the ways in which human poisonings and deaths occur, the writer points out. Others are miscalculation of dosage in medical use of the element, and industrial poisoning among workers handling pyrites and salts, or exposed to thallium-bearing dusts. Signs and symptoms in man usually are manifested in the nervous system and the alimentary tract, the author states.

The pamphlet was written by Francis F. Heyroth, Kettering Laboratory of Applied Physiology, College of Medicine, University of Cincinnati.

Limited quantities are available to professional persons at 10 cents per copy through the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

THE BCG STATEMENT
From National Tuberculosis Association

NEW YORK, N. Y.—Vaccination with BCG does not provide complete protection against tuberculosis and, until further controlled studies are conducted, cannot be recommended for the general population. However, since BCG appears to provide some degree of protection, it is recommended for members of groups constantly exposed to tuberculosis if they have a negative reaction to the tuberculin test.

These conclusions are contained in a statement of policy adopted by the Executive Committee of the American Trudeau Society, Medical Section of the National Tuberculosis Association, and published in the March issue of the NTA BULLETIN. This is the first official statement by the ATS on BCG.

Dr. H. McLeod Riggins of New York, N. Y., chairman of the ATS Chemotherapy Committee which prepared the report on which the statement is based, explained yesterday that BCG vaccination, developed by Calmette and Guerin from a non-virulent strain of tubercle bacilli, causes a primary tuberculosis infection. As a result of this infection, the body increases its resistance to the disease, inducing an artificial immunity of varying degree. A positive reaction to the tuberculin test, according to Dr. Riggins, indicates that a person has had a primary tuberculosis infection and his body has built up a degree of acquired immunity. Persons having a positive tuberculin test reaction probably do not benefit from vaccination with BCG, he said.

The statement emphasizes that further studies are necessary to determine the true value of BCG and points out that the vaccine cannot be regarded as a substitute for approved public health measures to protect the public from tuberculosis. Until additional information is obtained, vaccination of the general population cannot be recommended except for carefully controlled investigative programs, several of which are now under way. These programs, the statement suggests, are usually best carried out under the auspices of official agencies, such as the U. S. Public Health Service, state and municipal health departments and other especially qualified groups.

Although studies thus far made indicate that the incidence of tuberculosis may be reduced when groups likely to develop the disease because of unusual exposure to tuberculosis are vaccinated, the statement points out that the degree of protection afforded the individual is not complete and the duration of relative immunity is not known.

BCG vaccination is recommended for the following groups if they are subjected to more than ordinary exposure to tuberculosis: doctors, medical students and nurses; hospital and laboratory personnel whose work brings them in contact with the bacillus of tuberculosis; individuals who are unavoidably exposed to tuberculosis in the home, and patients and employees of mental hospitals, prisons and other custodial institutions among whom the incidence of tuberculosis is known to be high.

Even with these groups, the statement warns against placing complete reliance on BCG for protection and points out that proper precautions should be taken to minimize or prevent "undue hazardous exposure of hospital patients and personnel and members of a household if an infectious patient is under treatment in the home."

While the vaccine, when prepared under ideal conditions and administered to tuberculin-negative persons by approved techniques, may be considered harmless, the statement does not advocate that BCG be made available for general distribution in the United States at present because: (1) the most effective strain of BCG has not been determined nor has satisfactory standardization of the vaccine been achieved, (2) the best qualified experts have not agreed as to the most effective vaccination procedure to employ and (3) fully satisfactory arrangements have not been perfected for transportation and storage of the vaccine.

It is further recommended that the vaccine be prepared only in laboratories especially devoted to this task and where virulent tubercle bacilli are not cultivated or handled and where all possible precautions are exercised to assure safety of the product.

"Fortunately, great advances have been achieved during recent years in the development of diagnostic methods applicable on a mass scale and there have been equally great improvements in the surgical and medical treatment of tuberculosis," the statement concludes. "The expansion of modern diagnostic and therapeutic facilities is required at this time to make full use of these new methods which can accomplish further dramatic reduction of tuberculosis mortality and morbidity rates in the United States.

"It is to be emphasized that BCG vaccination must not be regarded as a substitute for approved hygienic measures or for public health practices designed to prevent or minimize tuberculous infection and disease. Vaccination should be regarded as only one of many procedures to be used in tuberculosis control. Vaccination seems unwarranted: (a) in areas in which the tuberculosis mortality rate is extremely low and (b) in localities in which the tuberculin test is of especial value as a differential diagnostic procedure."

SPECIAL BULLETIN NO. 15

A Statement Submitted on Behalf of the American Medical Association by Dr. Edward L. Bortz, to the Senate Committee on Labor and Public Welfare, on S. 2215, Introduced by Senator Bridges, for Himself and Senator Pepper, Senator Ives, and Senator Murray, a Bill to Provide for Research and Control Relating to Diseases of the Heart and Circulation, April 8, 1948.

Mr. Chairman and
Members of the Committee:

My name is Dr. Edward L. Bortz. I practice medicine in Philadelphia, Pennsylvania, and I am submitting this statement as President of the American Medical Association. I appreciate your courtesy in permitting me to file written comments and regret that other commitments have interfered with my personal appearance before the Committee.

Diseases and degenerative processes of the circulatory system, which includes the heart and the blood vessels of the body, are the principle cause of death in the United States each year. Every encouragement should be given, therefore, for the promotion of investigations which will lead to a clearer understanding of the processes underlying these various afflictions. When more knowledge is available with reference to the underlying cause of degenerative disturbances in the circulatory system, it is not too optimistic to assume that more effective means for their control should follow.

More than a half million lives are destroyed

each year because of these degenerative conditions. This loss of life is due to the fact that at present medical science has no effective means whereby the progression of events in these conditions can be interrupted, such as hardening of the arteries, high blood pressure, coronary disease and certain infections which destroy the tissues of the heart and the blood vessels of the body.

There is a definite need for funds to finance researches in the various particular phases of the diseases of the circulatory system and recognition should be given to the importance of encouraging the research now going on and of providing for the training of scientists particularly in the basic sciences, because at the present time there is insufficient financial support of this group whose investigations are so basically important to medical science. With an adequate financing program a larger number of trained personnel should be made available.

S. 2215 contemplates a broad program of research and the committee will, I feel confident, wish to frame the legislation carefully to the end that its objectives may be reached. With that thought in mind, I suggest that serious consideration be given to the qualifications to be possessed by the twelve appointive members of the National Heart Council to be created by Section 3 (a). As the bill is now phrased, it is proposed that they be "leaders in the fields of fundamental sciences, medical sciences, education, or public affairs." The subject matter dealt with by this bill involves many highly technical, scientific problems and the appointive members should by reason of their experience and training be qualified to bring to the solution of these problems the type of technical aid that will be of the greatest value to the Surgeon General of the Public Health Service in carrying on the functions to be devolved on him. It may be questioned whether a leader in the field of public affairs will be particularly equipped to make very much of a contribution to the promotion of the kind of research contemplated by the bill.

Since this Council is expected to make a definite contribution to the research program, consideration should be given to the desirability of clothing it with more authority than now seems to be contemplated by the bill. Section 7 (b) would authorize the Surgeon General, with the approval of the Administrator of the Federal Security Agency, to make such rules and regulations as may be necessary to carry out the provisions of the law. Here it would seem that the advice and counsel of the members of the National Heart Council should be heeded in formulating the rules and regulations other than those relating solely to administration.

Section 3 (e) provides that the Council shall meet "from time to time to (1) advise the Surgeon General the conduct of the program of the National Heart Institute and (2) to review and make recommendations regarding requests for grants-in-aid for research, education, and control." It seems to me that it is important that the Council keep in close contact with developments and possibly it should be required to meet at least once each year and at such other times as occasions necessitate.

Section 2 devolves a number of important responsibilities on the Surgeon General, including the promotion of research projects, relating to the cause, prevention, and methods of diagnosis and treatment of heart disease, the coordination of research in this field, the making available of grants-in-and, the granting of fellowships and traineeships, and so on. The bill is not entirely clear with respect to the part that the Council will assume in aiding the Surgeon General in performing each of these functions. If the Council is to be composed of members who are eminent in the field embraced by this bill, and I sincerely hope that they will be, then I would like to see a fuller utilization made of their combined knowledge. It would seem to me, too, that the Surgeon General would welcome that utilization.

There may be precedents for the creation of a Council such as contemplated by S. 2215 to aid a federal administrative official in carrying out the provisions of a law and of which this administrative official is himself a member. It does seem somewhat incongruous to me, however, for the Congress to designate a federal official to advise himself as to what action he should or should not take. Perhaps the committee will wish to consider the propriety of such an arrangement.

I hope the committee, too, will consider this bill in connection with the broader pending legislation contemplating the creation of a National Science Foundation, S. 2385, introduced by Senator Smith, for himself and Senator Cordon, Senator Revercomb, Senator Saltonstall, Senator Thomas of Utah, Senator Kilgore, Senator Magnuson and Senator Fulbright. One of the objectives of S. 2358 is to initiate and support basic scientific research in the medical sciences and to grant scholarships and graduate fellowships in such sciences. Another objective of the bill is to consolidate and coordinate federal activities in medical research. Two special fields of medical research have already been accorded recognition by Congressional action, research relating to cancer which kills 185,000 people a year and research relating to mental disorders which account for more than 57,000 occupied hospital beds. Perhaps these types of research and the type contemplated by S. 2215, do justify this special emphasis. Careful consideration should be given, however, lest these special emphases lead to a multiplicity of independent laws each dealing with particular medical research problems and create interference with the attaining of the highly desirable objectives of S. 2385 to coordinate federal medical-research in a National Science Foundation.

Arizona's Blue Shield Plan

Sponsored by organized medicine of the State for the pre-payment of "in-hospital" surgical and maternity care, enrolled more than thirteen thousand participants in more than two hundred and fifty groups in the first five and a half months of its operation.

This was reported to the Blue Shield Corporation at its recent meeting, held during the convention of the Arizona Medical Association, by Dr. E. Payne Palmer, Sr., of Phoenix, Blue Shield President.

The Blue Shield Corporation is composed of the House of Delegates of the Arizona Medical Association, and the directors and professional committee members of Blue Shield. It was the first meeting of the corporation since the Blue Shield Plan was placed in effect last November 15.

"The support contributed by the Arizona Medical Association provided the foundation upon which Blue Shield has begun to build," Dr. Palmer said. "Without this support, it is doubtful if Blue Shield could have been successfully inaugurated. The launching of Arizona Blue Shield will be a lasting tribute to the medical profession of the State in its effort to provide for equitable distribution of medical care at a cost the public can afford to pay."

Four factors in the growth of Blue Shield, in addition to the sponsorship and support of the medical profession, were cited by Dr. Palmer. They were:

Offering Blue Shield to established Blue Cross groups; use of the experienced Blue Cross field force to introduce Blue Shield; public demand for a method of pre-paying the cost of surgical and maternity care, and "having a good Blue Shield Plan."

The Blue Shield enrollment will reach a total of 20,000 by the end of the first year of operation next November, Dr. Palmer predicted.

He also reported that the number of Blue Shield participating physicians has increased from 53 per cent of the licensed doctors of medicine in the State when the Plan was made available to the public, to 77 per cent of the doctors of medicine of the State as of last April 15.

"The original membership listing and the increase in participation should provide ample evidence to the people of the State that Organized Medicine is concerned with their welfare and has taken positive action in their behalf," Dr. Palmer said.

Blue Shield is administered jointly with Blue Cross, the companion plan which provides for the pre-payment of hospital care. All matters of policy touching on the medical aspects of Blue Shield are referred to the professional committee, of which Dr. H. D. Ketcherside, Phoenix, is chairman. Dr. Ketcherside is president of the Maricopa County Medical Society.

L. Donald Lau, Executive Director of both Blue Shield and Blue Cross, announced that all officers of Blue Shield were re-elected for one year terms at the annual Blue Shield board meeting which followed the corporation meeting. The officers, in addition to Dr. Palmer, are Dr. A. I. Podolsky, Yuma, vice president; Dr. Carlos C. Craig, Phoenix, secretary, and Earle Barrows, Phoenix, treasurer.

Dr. Palmer, Mr. Barrows, John Durkin, Tucson, and Dr. W. Paul Holbrook, Tucson, were re-elected to the board of directors for three-year terms, and Dr. J. Lytton-Smith, Phoenix, was elected to the board for three years. Continuing members of the board, in addition to the officers, are Dr. E. A. Born, Prescott; Dr. Walter Brazie, Kingman; Dr. Meade Clyne, Tucson; Clyde Fox, Tucson; Dr. Hal Rice, Bisbee; Richard C. Simis, Phoenix; Steve Spear, Phoenix, and Dr. O. E. Utzinger, Ray.

Dr. James R. Moore, Phoenix, was re-elected to the Professional Committee for three years, and Dr. Harry Southworth, Prescott, was added to the committee for a similar period. Continuing members of the committee are Dr. Ketcherside, chairman; Dr. E. M. Hayden, Tucson, and Dr. Joseph M. Greer, Phoenix.

Mr. Lau announced that offices of Blue Shield and Blue Cross have been moved from the fourth floor of the Arizona Title Building in Phoenix, to larger quarters on the second floor of the same building. The rapid growth of Blue Shield, and the continuing membership increase of Blue Cross, made increased space essential, Mr. Lau said.

BLUE SHIELD NEWS

Rates Reduced in Iowa

Always held as one of the chief characteristics of a non-profit Blue Shield plan is the

possibility that subscriber rates will be reduced whenever the utilization experience of a plan warrants the passing of such a saving to the subscribers. The alternative, more frequently chosen is the expansion of subscriber benefits in order to make full use of available earned income for the payment of professional services.

At a recent meeting of the Blue Shield board of trustees in Iowa, it was decided that a reduction in subscriber rates was entirely possible in view of two years' favorable experience. The reduced rates represent a monthly saving to subscribers of twenty-five cents for individuals and fifty cents for families.

New Blue Shield Commissioners

Two vacancies on the Blue Shield Commission were filled at the Commission's last meeting in Los Angeles with the election of Dr. Elmer Hess, Erie, Pa., and Dr. Walter Martin of Norfolk, Va. The new members of the Blue Shield Commission were nominated by the A.M.A. Council on Medical Service to fill vacancies created by the resignation of two Commissioners who had previously represented that body.

National Enrollment Gains

Enrollment studies for the first quarter of 1948, nearly completed on May 1, indicate that total membership in non-profit prepayment plans is close to the 8,000,000 mark. .

Total enrollment on December 31, 1947 was tabulated at 7,328,143, representing a gain during 1947 of approximately 60% over the previous year's total, 1947 having witnessed the largest gain in the history of non-profit plans.

Connecticut Approves Formation of Non-Profit Plan

The House of Delegates of the Connecticut State Medical Society, in a recent session, voted to establish a prepayment medical care plan patterned after Blue Shield in Massachusetts.

Technical assistance in the development of Connecticut's new plan has been offered to the society's new committee by the Blue Shield Commission and staff members.

Enabling Act in South Carolina

After many delays, an enabling act has been passed by the legislature and signed by the governor in South Carolina, permitting the formation of a Blue Shield type of prepayment plan in that state.

The state medical society, at its annual meeting in May, is expected to take some action toward activating a committee with authority to proceed with the development of such a plan. Blue Shield assistance has been made available to such a committee in South Carolina, should the state society decide to proceed.

Constitutional requirements of the Blue Shield organization call for three Commissioners to be nominated by the A.M.A. Council on Medical Service, the third Council representative on the Commission being Dr. A. W. Adson, Rochester, Minnesota.

First Enrollment in Chicago

Chicago Medical Service, youngest member of the Blue Shield family of plans, started active enrollment on April 15. Approximately 12,500 members were enrolled during the first two weeks, enrolling through the Chicago Board of Education.

Blue Shield Financial Report for 1947

Blue Shield plans recorded a total income of $48,445,245 during 1947, according to a financial report released recently from their national office in Chicago.

Payments to physicians totalled $37,942,749, amounting to 78.14% of the annual income. $7,461,570 was expended for operating expense during the year, accounting for 15.37% of the total income. The balance of $3,154,186, or 6.49%, was added to reserpe accounts.

Blue Shield plans have accumulated $20,881,546 in assets during the past few years, of which $9,947,547 are held in reserve accounts for contingencies of various kinds.

Blue Shield Expansion in North Dakota

Authorization was granted at the meeting of the House of Delegates of the North Dakota State Medical Association on May 23 for the expansion of Blue Shield to a state-wide program.

Established two years ago as an experiment in the Fargo area, Blue Shield has enrolled approximately 9,000 members and received the unanimous support of physicians in Cass County.

Distinguishing feature of Blue Shield in North Dakota is the provision of full service benefits to the subscriber and his dependents. Physicians in Cass County have been accepting the plan's fee schedule as full payment for services rendered, regardless of the patient's income status.

Concluding that the experiment had proved successful, the House of Delegates instructed its Committee on Medical Economics and a subcommittee on prepayment medical care to make the necessary arrangements for extending the plan throughout the state, such arrangements

subject to final approval by the society's Council.

Blue Shield in North Dakota has been administered as a companion plan to Blue Cross during the past two years.

Blue Shield Plans Seek Uniformity in Veterans Programs

Eleven Blue Shield plans, in their capacity as intermediary contractors with the Veterans' Administration, are completing final efforts to achieve uniformity in contract and administrative procedures for their home-town medical care programs.

With assurance of cooperation from the VA office in Washington, D. C., proposals for uniform administrative procedures and contract changes were distributed recently by the Blue Shield national office to the plans directly involved.

The Blue Shield Committee on Veterans Care, with Dr. A. E. Larsen of California Physicians' Service as chairman, will meet in Denver on June 17 to review the proposals in question before submitting its final recommendation to the VA headquarters office.

Blue Shield Plans Return Capital Loans

Within the last ninety days two Blue Shield plans have returned the full amount of money advanced by individual physicians for their original capitalization.

Ohio Medical Indemnity, Inc., sponsored by the Ohio State Medical Association, has redeemed $100,000 in preferred stock which was purchased by individual members of the profession when the plan was organized two years ago. The payment was made possible by sound management and a rapid rate of growth. The Ohio plan, with 342,665 members enrolled on March 31, ranked fifth in size among Blue Shield plans.

Mutual Medical Insurance, Inc., sponsored by the physicians in Indiana, has redeemed certificates in excess of $80,000, also purchased approximately two years ago when the Indiana plan was established. The ability to return capital loans in Indiana closely parallels that of Ohio, Blue Shield in Indiana having acquired a total membership of 156,816 on March 31.

Plans Raise Income Ceilings

With the approval of their respective House of Delegates, two Blue Shield plans were authorized recently to increase the income ceilings under which full service benefits are provided for subscribers.

Medical-Surgical Plan of New Jersey was authorized to establish its income ceiling at $5,000 for all subscribers, regardless of marital status. At the same time an increased fee schedule for payment to physicians was approved, the combination of changes requiring adjustment in subscription rates.

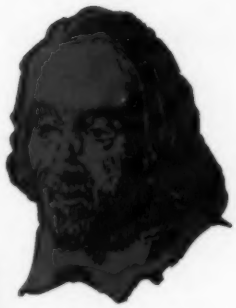
California Physicians' Service secured approval for hiking its income ceilings to $3,000 for single persons and $4,000 for families, without any immediate change in fee schedules or subscriber dues.

In both plans participating physicians have agreed to accept the established fee schedule as full payment for services rendered to subscribers whose income falls below the income level described above, being privileged to make their usual charges in all other cases while accepting the plan's payment as a credit against the total charge.

IMPORTANT NOTICE
Arizona Medical Journal

Due to the rapid growth of Arizona, added interest shown by the medical profession and increase in circulation of the Medicine Journal, the Editing and Publishing Committee have decided to release the Journal monthly instead of bi-monthly. The Editing Board has increased the number of associate editors, whereby they will supply sufficient material to warrant this change. This change will become effective January, 1949.

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Journal of

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Vol. 5 July, 1948 No. 4

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Editorials

EDITORIAL BY HUGH C. THOMPSON, Jr., M. D.

Tucson, Arizona

Arizona likes to pride itself on being a health resort, and thousands of health seekers and their families are yearly adding themselves to our population. But the sad truth is that in many ways Arizona is more a menace to health than a health resort. Our tuberculosis rate is high, and there are totally inadequate facilities to care for the poorer active cases, who consequently remain in the community and spread the disease. Our maternal and infant death rates were only a few years ago almost the worst in the nation. Diarrheal disease is far too common, and sewage disposal in many parts of even our largest cities is both primitive and dangerous. Dust and dry weather, generously aided by unpaved roads and eager realtors, make much of the state a horror for the sufferer from allergy, and raise the incidence of coccidiomycosis. Facilities for the care of mental disease, venereal disease, and defective children lag way behind the needs.

It has been the habit to say "Yes, but," and blithely blame the situation on the high proportion of Indians, Mexicans and migrants, the newness and poverty of the state, "interests" which combat the spending of money for health and sanitary measures; the impossibility of changing inadequate and antiquated laws, etc. All these things have played, and do play a large part, but there is much that organized medicine and individual doctors can do to correct these menaces and indeed, to correct their own faults.

For instance, the legislature might be more willing to appropriate large sums for care of tuberculosis and venereal disease if true figures of the incidence of these conditions could be presented by the State Health Department. Yet, practicing doctors serving on the Professional Board say that reporting of these diseases by private practitioners is usually neglected, so that no accurate statistics are available.

The Arizona Medical Association through its Health Activities Board and the health councils they sponsor can do much to educate the laity on health needs in the community, and to encourage the enforcement of existing statutes. Vigorous publicity and the legislature committee can aid the passage of constructive legislation, and the necessary appropriations. But the greatest force in improving the health situation in Arizona will remain the individual practicing physician. It is he who can take extra five minutes to report his cases of communicable disease. It is he who can adequately inform himself on existing facilities so that what is available now may be used by his patients. It is he who can continually, day in and day out, point out to his patients, his friends, his church, service club or legion post, his supervisors and legislators, the need for adequate sewage disposal, for dust control, for larger tuberculosis and mental hospitals, for a Children's Colony in brick instead of on paper, for adequate health laws and public support for officials who enforce them. Making Arizona a state that is really a health resort and a better place to live in will take years of effort and large expenditures of public funds. The laity look to the medical profession for leadership in this, as well as for advice about private ills. Let us give it to them.

THE STATE MEETING

The Fifty-Seventh Annual Meeting of Arizona Medical Association was held at the Shrine Auditorium in Phoenix, May 19-21. The commercial exhibits occupied the entire main floor of the auditorium. The Scientific Sessions were well attended. The guest speakers were Dr. J. Dewey Bisgard, Professor of Surgery, Univer-

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sity of Nebraska School of Medicine; Dr. Jerome W. Conn, Associate Professor of Medicine, University of Michigan College of Medicine, and Dr. Irvin E. Hendryson, Department of Orthopedics, University of Colorado School of Medicine, the latter being present under the auspices of the National Foundation of Infantile Paralysis. The meeting was also honored by the presence of Dr. W. W. Bauer, Chicago, director of health education of the American Medical Association. The House of Delegates held two long sessions during which much routine business was transacted.

An outstanding feature of this meeting was the formation of the "Fifty Year Club." At the Presidents Dinner, which was held in the patio of the Hotel Westward Ho, eleven Arizona men who have practiced medicine for over fifty years were honored. Two physicians who passed away during the past year were honored posthumously. Each was presented with a bronze plaque, the gift of the Association. The presentation was made by Dr. Robert S. Flinn, Chairman of the Council.

The 1949 meeting will be held in Tucson. The following is the list of officers elected for the ensuing year:

Dr. Robert S. Flinn of Phoenix was named president-elect. The Phoenician will be the first son of a past president to head the association. His father, Dr. John W. Flinn, was president in 1914.

Other officers chosen were: Dr. Thomas H. Bate of Phoenix, vice-president; Dr. Frank J. Milloy of Phoenix, re-elected secretary for his seventh term; Dr. C. E. Yount, Sr., Prescott, re-elected treasurer, and Dr. James R. Moore of Phoenix, re-elected speaker of the house of delegates.

New councilors are Dr. Robert E. Hastings of Tucson for the southern district and Dr. A. L. Podolsky of Yuma for the central district.

Arizona State Medical Association

ANNUAL REPORT TO THE STATE MEDICAL SOCIETY from your COMMITTEE ON INDUSTRIAL RELATIONS

During the war years it was impossible for your Committee to meet with the Commissioners regularly. This year, however, we have endeavored to have more regular meetings with Commissioners and other executive personnel of the Commission in order to promote a better understanding between the Commission and the medical profession of the State of Arizona. Such a meeting was held on May 2nd and the following information was presented by Mr. Edwards to us. This, we feel, should be passed on to you so that you may better understand some of their problems. Mr. Edwards informed us of the marked growth of the Commission in the past year, and stated that many of their difficulties arose from lack of space, necessity of obtaining and training new employees, and cited the growth by presenting the following figures:

BRIEF COMPARATIVE ANALYSIS OF STATE FUND OPERATIONS OF INDUSTRIAL COMMISSION

	1947	1948	Increase
Average Monthly Medical Cost (Doctors, Hospitals, Drugs, X-rays, Anesthesia, Special Examinations, Dentists, Nurses and Miscellaneous)	$ 99,828.60	$120,532.33	$21,000.00
Average Monthly Compensation Cost	260,736.25	294,015.28	33,000.00
Amerage Monthly Total	360,564.85	414,547.61	54,000.00

Reported State Fund Cases - 5-17-48..... 8,452
Reported State Fund Cases - 5-17-47..... 7,430

11,022

Reported 14% increase in 1948 against 1947.
Since the first of the year, an average of ninety-nine (99) new cases were reported per day.

Your Committee feels that one of the greatest problems facing the Medical Advisory Board, the private physician and the Industrial Commission is that class of case which falls under the heading of general disability and into which category the low back cases fall. Since the Supreme Court decision of Hoffman vs. Brophy, 149, Pacific Second, 160, it has been impossible for the Commission to make a final settlement based upon percentage of disability but rather


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on loss of earning power in a continuing award. Rarely does one encounter difficulty in the settlement or in the establishment of functional loss on scheduled injuries as prescribed by the Arizona statutes, and just as rarely does one encounter psychoneurosis in such cases. However, in general disability where final settlement cannot be made, psychoneurosis is more generally the rule than the exception. Therefore, it is the opinion of the Committee that under such standards a discouraging condition exists in relationship between the doctor and the patient. Similarly a wage earner has been changed to a psychoneurotic and the dependents of the workman suffer not only financially but by disrupting their entire home life. In addition, the Commission suffers great loss financially, forcing their insurance rates up to a high bracket and discouraging industry from entering the state. Naturally, the only phase which we are basically interested in is that which concerns primarily the medical problem. We feel, however, from a medical aspect alone, we are justified in recommending to the Commission that the statutes of the state be changed so as to establish scheduled injuries throughout all category of cases.

The Committee has found on many occasions, after reviewing a case, that upon closer questioning of the patient he has had numerous industrial injuries. We feel that the knowledge that these injuries existed is of great importance. We, therefore, recommend to the Industrial Commission that some method of cataloging repeat injuries should be made so that all the files of all the injuries may be at hand for the information of the attending physician, consulting boards or the Medical Advisory Board, and it is further recommended in such individuals who are repeatedly being injured, that they be brought before a consulting board at an earlier date than is usual with the average employee.

One of the great difficulties the Committee has had when functioning as the Medical Advisory Board has been, that after carefully examining a patient and presenting an opinion to the Industrial Commission, we find that a few months later the patient is before us again for re-examination. This has resulted many times from the fact the patient had gone to a physician of his choice who, upon superficial examination, has reversed the opinion of the Medical Advisory Board after they have spent many hours in careful examination, evaluation and deliberation; or in some instances where the private physician may have carefully examined the patient but had only stated in his report to the Commission that in his opinion the patient is still disabled without informing the Commission upon what basis his opinion was made or why, from a medical standpoint, he disagreed with the Medical Advisory Board. We feel, therefore, we should recommend to the physicians of the State Medical Society that before so doing, they obtain the file of the Industrial Commission for careful scrutiny, and if they disagree with the findings of the Medical Advisory Board, that they state wherein they disagree and for what reasons. We further feel that the opinion of a Committee such as yours should stand against any final report of a single private physician as this Committee has been formed at the selection of the Medical Society. We do feel, however, that in such an event where a disagreement arises, that the Committee should have the privilege of reviewing such a report, and if they feel the report brings up any new and additional information which they have not considered, that they should then have the privilege of requesting re-examination.

While the Industrial Relations Committee recommends that in all complicated cases consultation be held with other physicians, we feel that repeated examinations by too many consultants confuse the issue and tend towards making the patient psychoneurotic. We feel that cooperation between the employer and the Industrial Commission and the private physician towards establishment of some type of light work as a form of rehabilitation would do much to improve the relationship between the employees, physician and the Industrial Commission, and we further believe that discharging or "firing" an injured employee does much to make the relationship poor.

We believe that every effort should be made to reduce the back log cases by consulting boards and the Medical Advisory Board, and further that they should be kept to a minimum by completing the case before psychogenic changes arise.

We further believe there is need for education of the new and old physicians in the state regarding industrial work and their relationship to the Commission. The initial report of injury is simple enough, but very often it is incomplete as to the manner of injury and particularly regarding the past disabilities. We would recommend to the individual members of the State Society that they cooperate in this matter.

It is further the opinion of the members of the Industrial Relations Committee that certain changes should be made regarding the Medical Advisor. We feel that it would be wise to employ the Medical Advisor strictly as an advisor on a part time basis with probably a reduction in salary, but we further feel that the Medical Advisor should be allowed to be a member of the consulting boards and that he receive equal remuneration for this service with other physicians as established by the fee schedule of the Industrial Commission.

Respectfully submitted,

J. Lytton-Smith, M. D., Chairman
R. E. Hastings, M. D.
I. E. Harris, M. D.
H. T. Southworth, M. D.
Charles W. Sult, Jr., M. D.

ARIZONA STATE MEDICAL ASSOCIATION

TREASURER'S ANNUAL REPORT

April 20th, 1947 through April 20th, 1948

GENERAL FUND

Cash on Hand, April 20th, 1947				**$22,245.29**
RECEIPTS				
Dues: 34 Members	@	$ 30.00	$ 1,020.00	
463 Members	@	47.00	21,761.00	
497			$22,781.00	
1 Associate Member	@	$ 15.00		
3 Associate Members @ $25.00		75.00		
		$ 90.00		
Less Refunds		30.00	60.00	
Exhibitors			3,775.00	
TOTAL RECEIPTS				$26,616.00
LESS DISBURSEMENTS				
Advertising: Radio		$2,737.72		
Newspaper		678.97	$ 3,416.69	
Blue Shield			10,120.85	
Dues and Subscriptions			36.00	
Delegates' Expense			1,800.38	
Council Meetings			233.06	
Flowers			54.06	
Rent			960.50	
Salaries			4,400.00	
Social Security Tax			38.38	
Office Supplies, Mimeographing and Printing			1,086.22	
Postage			150.00	
Industrial Insurance			16.00	
Telephone and Telegraph			336.71	
Treasurer's Office			200.00	
Treasurer's Bond			87.50	
Miscellaneous			80.50	
Press Clipping Service			15.00	
Photographs of Past Presidents			68.20	
Stenographers			280.00	
Annual Meeting:				
Deposits, 1948 Meeting		$ 200.00		
Construction of Commercial Exhibit Booths		657.00		
Badges		157.77		
Guest Speakers		596.96		
Loud Speakers		98.50		
Hotel		121.56		
Printing and Art Work		111.65		
Miscellaneous and Registrations		132.86	2,076.30	
TOTAL DISBURSEMENTS				**25,456.35**
NET INCREASE				$ 1,159.65
LESS OTHER EXPENDITURES				
Office Furniture			$ 226.44	
Typewriter			125.63	352.07
				$ 807.58
ADD				
Accrued Withholding				16.00
NET ADDITION TO BANK ACCOUNT				823.58
CASH ON HAND, APRIL 20th, 1948				**$23,068.87**

MEDICAL DEFENSE FUND

CASH ON HAND, APRIL 20th, 1947			
Yavapai County Savings Bank		$ 1,623.53	
Bank of Arizona		1,753.99	
TOTAL CASH			**$ 3,377.52**
RECEIPTS			
Bond Coupons	$ 896.94		
Interest on Savings Account	26.29		
463 Members @ $3.00	1,389.00		
TOTAL RECEIPTS		$ 2,312.23	
LESS DISBURSEMENAS			
Legal Expense	$ 905.37		
Safety Deposit Box	3.60		
Miscellaneous	1.40	910.37	
NET INCREASE			1,401.86
CASH ON HAND, APRIL 20th, 1948			**$ 4,779.38**

SUMMARY

Total Cash—General Fund			$23,068.87
Medical Defense Fund			4,779.38
TOTAL CASH ON HAND			**$27,848.25**
Cash—Bank of Arizona—General Fund	$23,068.87		
Medical Defense Fund	3,129.56	$26,198.43	
Cash—Yavapai County Savings Bank—Medical Defense Fund		1,649.82	
TOTAL CASH ON HAND			$27,848.25
INVESTMENTS			
U. S. Bonds—Medical Defense Fund			$33,000.00
FURNITURE AND FIXTURES			352.07
TOTAL ASSETS			**$61,200.32**

UNITED STATES TREASURY BONDS OWNED BY THE ASSOCIATION

2⅞% — 1955-60

$100	$500	$1000
206416 F	88490 L	188524 D
206417 H	88491 A	188525 E
206418 J	88492 B	188526 F
206419 K	88493 C	188527 H
206420 L	88494 D	188528 J
	88495 E	188529 K
	88496 F	336027 H
		336028 J
		343703 C
		343704 D

2¾%—1960-65

$1000—55090 L
55091 A
55092 B
4263 C
4264 D

2¾%—1951-54

$1000—70887 H
66163 C
46532 B

2½%—1949-35

$1000— 4446 F
4447 H

2½%

$1000— 5746 F
5746 H
5748 J
35081 A
13695 E
39044 D
5796 F
5797 H
5798 J

RECOMMENDATIONS

1. With our expenditures as great as they have been, we cannot safely reduce the annual dues.
2. That $3.00 of the annual dues be prorated to Medical Defense.
3. That the Treasurer be authorized to purchase a $1000 United States Bond for the Medical Defense Fund.

Respectfully Submitted,
C. E. Yount, M. D.

We, the undersigned Committee, appointed by President Preston T. Brown, have audited the books of the Treasurer and inspected the bonds in his custody, and find them to be correct.

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JOSEPH G. RICE, PRESIDENT

REPORT ON CONFERENCES AT A. M. A. HEADQUARTERS

Reason for Conferences

In order to coordinate the work of the state medical association with that of the American Medical Association, the Council sent a representative from the central office to Chicago early last December for conferences with the various bureaus and offices at A.M.A. headquarters. A full week was spent at the A.M.A. offices beginning with a conference with Dr. George F. Lull, Secretary-Manager of the American Medical Association and concluding with attendance at a Committee meeting on COORDINATING MEDICAL ACTIVITIES, members of that committee coming in from several states for the important discussions. In all, eighteen conferences were held during the week.

Benfits From Conferences

First hand contacts with the A.M.A. headquarters staff is necessary if a state is to understand the full scope of organized medicine. Bureaus are especially pleased to have the state associations confer with them directly so that all concerned may have a full understanding as to "who is who" and "what is what." The Bureaus of Membership and Fellowship, Directory, Exhibits, Legislation, Health Education, Medical Service, Auxiliary, Economic Research, Medical Education, Hospitals, Industrial Health were among those visited and from whom invaluable assistance was forthcoming. The Arizona Medical Association must admit that it receives its best aid from those departments of the A.M.A. on which it calls most often for assistance. On the state level, the A.M.A. Bureau of Legal Medicine and Legislation has rendered invaluable help over a period of years. The same can be said for the Bureau of Health Education. All A.M.A. bureaus would serve the state as well if given the opportunity. Since the conference, the Association has called on the various bureaus more often and has cooperated with them more fully.

Recommendation: It was apparent that many bureau heads would appreciate an intimate contact with the state associations. The A.M.A. would do well to provide ways and means for Bureau heads to call on the state association either directly or through regional conferences. It is the exception, and not the rule, for A.M.A. officials to call on the states. It has long been their custom to await an invitation and then they may come only if enough visits are scheduled in the area to make the trip "worthwhile." The recommendation of Mr. Nelson of the executive offices of the Ohio State Medical Association at the Secretaries' Conference at Chicago last November that there be "More Use of Regional or Area Conferences by the A.M.A." is not only an excellent point but an urgent one

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after seeing what the A.M.A. has to offer—and it has much.

Conclusions Drawn From Conferences

It would seem from the week spent at headquarters, that some Bureaus have over-lapping responsibilities that are not too healthy. It is apparent as one goes from one Bureau to another that friction could easily arise—if some has not already arisen—due to confusion of authority and scope of work. This over-lapping is apparent among and between such bureaus as The Council on Medical Service, the A.M.C.P., Medical Economic Research, Rural Health and some aspects of Health Education. These over-lappings are difficult to avoid and even more difficult to overcome as the Arizona Medical Association itself has found with its multiplicity of committees. On the home field the Association is endeavoring to correct this over-lapping by streamlining the Committees. The A.M.A. could do as well in this respect. The greatest efficiency in the A.M.A. departments is evidenced by those which have specific jobs to do such as those on legislation and legal medicine, exhibits, medical education and the like—at least the undersigned has found it so in central office procedures and is even more convinced following the conferences.

The A.M.A. is overcrowded but has a building program under way that will relieve the situation. This is desirable for some of the secretarial offices are presently in a too crowded, if not an out-an-out "messy," state. Elbow room is lacking in too many instances giving a caller the impression that efficiency is lacking.

A.M.A. Is "In There Pitching"

Too much can not be said for the cordial reception given the caller at headquarters. Each and every office visited exerted every effort to demonstrate the functions of his or her department to the end that the caller could see and understand everything. It was apparent that many would appreciate the opportunity of visiting the states and it is again stressed that the A.M.A. should make this possible through regional conferences. A more aggressive approach on the part of the A.M.A. in this respect is mandatory for, in too many instances, their light is being concealed under a bushel.

Until such regional conferences are the order of the day, an interchange of visits between the state associations and the home offices at Chicage are "musts." It is good to know each other and to understand each other—it pays off in results.

Respectfully submitted,

Kitty Coleman, Conferee from the Central Office.

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SECRETARY'S REPORT

The duties of the Secretary are of a routine nature, consisting of keeping records, conducting official correspondence and attending to membership matters. These are dispatched through the central office, but the Secretary maintains daily contacts of necessity.

The American Medical Association holds a conference of secretaries of the state associations and editors of medical association journals each year in November. The A.M.A. defrays the expense of these officials to this conference. At the conference last November a symposium was held on the subject, "A Better Coordination of the American Medical Association with those of the State Medical Associations." Arizona was invited to participate in this five-way symposium, the other associations presenting papers on the subject being Ohio, Connecticut, Louisiana and South Carolina. Your Secretary stressed the point that the A.M.A. must lay out a more aggressive program to defeat the attempts for socializing medicine and to keep in close touch with the state associations on these national legislative problems. More and better publicity for medical service plans on the part of the A.M.A. was also urged. We also pointed out that too much is taken for granted between the national and state associations. There should be more interchange of personal contacts between officers, committees and bureaus of the parent and local medical organizations. The A.M.A. expect us to read all about everything in the pages of their Journal. It would seem that field trips by A.M.A. heads to the various state Associations would bear good fruit. This latter point was developed into a recommendation at the conference by Mr. Nelson of Ohio, his recommendation being: "The Establishment of a plan to enable members of the A.M.A. Board of Trustees to keep in closer touch with officials, executive offices, and activities of state associations; the plan to call for assigning a definite area or region to each trustee." In that point you have the crux of the symposium on a better coordination of activities between the A.M.A. and the state medical associations. It is needed and perhaps the A.M.A. House in June will point the way.

In order to keep in closer touch with our own county medical societies and have a better coordination between our own state and county societies, the Council requested funds of the House in 1947 for expanding the central office to include an employee of an executive capacity whose duty it would be to coordinate the work of the state and county groups. The Council proposed a raise in dues to the $50.00 per active member level in order to be in position to keep in closer contact with the counties. The House unanimously approved the proposal. In accordance with this action, larger quarters for the central office were secured and an executive employed. It took until December to accomplish this as space was difficult to find. We canvassed other state associations for leads for the executive position open and wound up with something like a dozen highly qualified applicants for the position. Choice was made in late November and the executive at work by December. Since that time the new executive has accompanied the President of the Association on a round of visits to the county medical societies and wheels put in motion to expedite the work of the association with the county societies. The coming year will see great progress along these lines.

The central office represents a considerable expense, which the treasurer will cover in his report, but is the necessary machinery for carrying on our work. No additional personnel is indicated for the coming year unless increased duties arise. There has been no waste of funds or effort. We are accomplishing things. We succeeded with our legislative programs. We have inaugurated our medical service plan which is self-supporting. We have an excellent health activities program under way, but the professional board should have some money for its purposes. Our annual meetings are on a par with the best of them and are better than self-supporting from revenue from exhibits . . . except that we do not cover expense of guest speakers entirely from this revenue. Arizona has attracted considerable attention for supporting a central office and maintaining a program of activities not yet reached by state societies much larger than we.

On the national level we would like to see the American Medical Association more aggressive so far as the state societies are concerned. They need to sell themselves to the rank and file of the membership and can only do this by keeping in intimate contact with us through their bureaus and Councils. For the first time Arizona has representation in the official A.M.A. family as we now have a member on their Council on Medical Service, our delegate having been elected by the A.M.A. House to that post one year ago.

There is much more that could be said but we have tried to convey it to the societies by numerous communications during the year and through the visits of the President of the Association to the County Medical Societies. In closing, I wish to congratulate our president, Dr. Brown, for his energetic program of visits to the societies this past year. This is done at a considerable sacrifice of time on the part of that officer, and Dr. Brown has not stinted with his services in these and other respects. He has carried the work of the Association direct to the county societies.

Signed,
FRANK J. MILLOY, Secretary



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ARIZONA ASSOCIATION OF PATHOLOGISTS AND RADIOLOGISTS

During the recent State Convention on May 21, 1948, the Pathologists and Radiologists of Arizona who were present in Phoenix met at Cathay Gardens and organized the Arizona Association of Pathologists and Radiologists. The physicians of Arizona who had been members of the former section on Radiology and Pathology of the Arizona State Medical Association were automatically considered as charter members. In addition those radiologists and pathologists who were not members of the section of Radiology and Pathology but who are in good standing with their respective County Medical Societies will be invited to become charter members. The Association plans to meet concurrently with the Arizona State Medical Association and it is planned to bring outstanding men in the fields of radiology and pathology to participate in the programs at these meetings.

At this organization meeting, Dr. John Foster, Phoenix, Arizona was elected president, Dr. George O. Hartman, a pathologist of Tucson, Arizona, vice president, and Dr. R. Lee Foster, radiologist of Phoenix, Arizona, Secretary and Treasurer. The charter members of the organization are: E. H. Bergman, M. D., 521 E. Rose Lane, Phoenix, Arizona; Harvey S. Faris, M. D., 23 E. Ochoa Street, Tucson, Arizona; John Foster, M. D., 543 E. McDowell Rd., R. Lee Foster, M. D., 15 E. Monroe, Phoenix, Arizona; Thomas T. Frost, M. D., 15 E. Monroe, Phoenix, Arizona; Ralph H. Fuller, M. D., Good Samaritan Hospital, Phoenix, Arizona; Douglas D. Gain, M. D., 15 E. Monroe, Phoenix, Arizona; Harry L. Goss, M. D., 125 W. Monroe, Phoenix, Arizona; Thomas A. Hartgraves, M. D., 926 E. McDowell, Phoenix, Arizona; George O. Hartman, M. D., 23 E. Ochoa, Tucson, Arizona; Edward M. Hayden, M. D., 23 E. Ochoa, Tucson, Arizona; Louis Hirsch, M. D., 4014 E. Elmwood, Tucson, Arizona; A. L. Lindberg, M. D., 721 N. 4th Avenue, Tucson, Arizona; Clarence M. Lightner, M. D., 601 5th Avenue, Yuma, Arizona; Arthur J. Present, M. D., 23 E. Ochoa, Tucson, Arizona; Maurice J. Richter, M. D., St. Joseph Hospital, Phoenix, Arizona; Maurice Rosenthal, M. D., St. Monica's Hospital, Phoenix, Arizona; W. Warner Watkins, M. D., 15 E. Monroe, Phoenix, Arizona; James H. West, M. D., 721 N. 4th Avenue, Tucson, Arizona, and O. O. Williams, M. D., 2020 N. 11th Avenue, Phoenix, Arizona.

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The American College of Physicians

The American College of Physicians held their twenty-ninth annual session in San Francisco, California, April 19-23. The Metropolitan atmosphere of this great city added much to the success of the meeting, and its physicians and people were at their best as hosts to the society. Anyone visiting this historical city for the first time cannot help but carry away lasting impressions of its many places of interest, and the Entertainment Committee provided trips both by land and water for the convenience of its guests. The General Sessions, the panel discussions, and the hospital clinics were up to their usual standard. The following clinical observations and conclusions were observed and confirmed:

1. Female estrogenic hormones do not produce malignancy in the female. However, if malignancy is present their administration is contraindicated. However, in women past sixty suffering from malignancy of the breasts or uterus, much relief may be obtained by their administration.
2. The same principles apply to androgen therapy in the male.
3. Much dagnostic material may be obtained by hormones excreted in the urine.
4. Radioactive Iodine is the treatment of choice for Graves' disease.
5. Urethane gives clinical relief in cases of chronic leukemia, and is probably most effective in the myelogenous type. But is of no value in acute leukemia.
6. The practical application of water balance in heart and kidney disease. Dr. Schemm who has been expounding this method of treatment in the past few years did much by his presence at both the general sessions and panel discussions in clearing up controversial points.
7. Streptomycin gives excellent results in the treatment of selected cases of tuberculosis.
8. Much has been learned in producing results in hypertension by extensive thoracolumbar sympathectomy.
9. Retrograde arteriography offers much in diagnosis of cardiovascular lesions.
10. Advisability of anticoagulants in coronary disease, as well as other diseases of the heart and blood vessels.
11. Excellent results in relieving the pain of malignancy by the new preparation Teropterin (Lederle).
12. Good results offered by early surgical treatment in Hodgkin's disease, i.e. removal of first glands to occur.
13. The necessity for proper planning and organization for possibility of all-out atomic warfare.

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COMMUNISTS TRY TO TAKE OVER A MEDICAL SOCIETY

Remarkable proof of Communist strength was given this week in election of officers of Medical Society of the County of New York. This is one of five counties that make up New York City. It's identical with Manhattan Borough.

A Communist front, the Physicians Forum, has long been active in various parts of the United States. This year it was strong enough to enter its own slate in race for officers of the medical society. What it counted on was the fact that few of the members ordinarily vote.

The Communists would have won if the old-line group in the society hadn't roused out a big vote by accusing the Physicians Forum of wanting "socialized medicine." Actually the question at issue was much larger than that of "socialized medicine." The question was whether Communists should get control of the medical society of the central borough of the biggest city in the United States. Last year the total vote in the election was 285. This year the Communists alone got more than four times that number. Total vote was 3,287. Old-line ticket got 2,083, Communist-controlled ticket, 1,204.

Although most of the 1,204 doctors who voted for the Communists' ticket aren't Communists themselves, many of them are. The Communists appealed to non-Communists by capitalizing on real grievances, like discriminatory practices in medical schools and hospitals, and low pay of doctors who care for the medically indigent in hospitals and dispensaries. One way to defeat Communist influence is by remedying these evils. When Communist-controlled slate gets 36% of a vote among doctors, it's time to wake up.

Reprinted from Counterattack, May 28, 1948.

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TUBERCULOSIS ABSTRACTS

For the first time in the long history of tuberculosis there is a drug which, if used in certain forms of tuberculosis at the proper time and in suitable dosage, will favorably influence the course of the disease. In streptomycin physicians have not a specific but a new weapon to be added to those they are already using so effectively.

STREPTOMYCIN IN TUBERCULOSIS

Although attempts to attack tuberculosis by chemotherapeutic means are as old as our knowledge of the disease, it was not until 1940 that Feldman, Hinshaw and Moses reported that promin had a striking effect on tuberculosis induced in guinea pigs. Attempts to use this and a few other drugs clinically followed. The results were suggestive but never fully convincing, possibly because the sulfone compounds were found to be too toxic in the dosage required for treatment of human beings.

From the first, the antibiotic **streptomycin** gave great promise as an agent for suppressing tuberculosis. In early reports Schatz and Waksman noted that a human strain of Mycobacterium tuberculosis was sensitive to streptomycin **in vitro** and further investigation by Feldman and Hinshaw proved conclusively that streptomycin would arrest and at times even apparently eradicate well established tuberculosis in the highly susceptible guinea pig.

The clinical use of streptomycin for tuberculosis was begun in December, 1944, and has been used by the author and his colleagues in more than 100 cases of tuberculosis of various types. At present (March, 1948) more than 500 additional patients are being treated with streptomycin at selected institutions under the auspices of the American Trudeau Society as well as a large number elsewhere.

In all discussions of the therapeutic possibilities of streptomycin in tuberculosis the situation must be viewed in proper perspective. The ability of streptomycin to suppress the disease is unique and at times apparently remarkable. The limitations of streptomycin are just as real. Because of certain toxic potentialities, its inadequacy in some clinical situations, and the expense of prolonged periods of treatment, the indiscriminate use of streptomycin in the treatment of tuberculosis must be discouraged.

The use of streptomycin in tuberculosis is indicated in all forms of **hematogenic disease,** including generalized miliary tuberculosis and meningitis, the prognosis of which has hitherto been regarded as hopeless. Of 12 patients who had disease of this type and were treated with streptomycin at the Mayo Clinis, four are living after six to 12 months. In treating tuberculous meningitis it is imperative that streptomycin be given both parenterally and intrathecally and as early as possible in the course of the disease.

Pulmonary tuberculosis suitable for treatment with streptomycin includes recent lesions of bronchiogenic dissemination, exudative lesions, and all recent but rapidly progressive tuberculosis which is not likely to be controlled by the usual methods. Pulmonary tuberculosis has been treated satisfactorily by daily doses of from one to three Gm., administered parenterally, for a period of from two to six months. Clinical improvement is noted early and can usually be demonstrated roentgenographically within one to two months. Cavities, especially if thick walled, are apt to remain patent. Sputum findings are changed from positive to negative in about half of the cases of far advanced pulmonary tuberculosis.

The patient whose pulmonary tuberculosis has improved during treatment with streptomycin usually continues to improve after this treatment is discontinued.

The use of streptomycin in pulmonary tuberculosis possibly is indicated as an adjunct to surgical procedures, such as lobectomy, pneumonectomy and even thoracoplasty. Streptomycin has been used with notable success in tuberculosis of the hypopharynx, larynx and tracheobronchial tree. Tuberculosis draining sinuses have responded well to treatment with streptomycin, even those of long duration.

Streptomycin therapy has shown encouraging results with cases of tuberculosis of the alimentary tract and peritoneum and tuberculosis of bones and joints.

Streptomycin has been somewhat disappointing in the treatment of some cases of tuberculosis of the genitourinary tract. Marked symptomatic improvement occurs in more than 50 per cent of such cases and the degree of tuberculous bacilluria usually is reduced. It is not a substitute for surgical procedures in cases of unilateral renal tuberculosis.

Among tuberculous conditions in which streptomycin is not indicated are included all cases in which satisfactory progress is made on a regimen consisting of the usual therapeutic measures. This category would include most cases of minimal pulmonary tuberculosis. The potential toxicity of streptomycin appears to be sufficient to deny the drug to patients who can make a satisfactory recovery without it.

At present chronic fibrocaseous pulmonary tuberculosis is not considered suitable for treatment with streptomycin except in combination with surgery nor are terminal cases of destructive pulmonary tuberculosis except as a palliative procedure. Treatment of tuberculous empyema with streptomycin has been disappointing.

It must always be emphasized that treatment with streptomycin is not a substitute for rest in bed and sanatorium care, which are still fundamental in the treatment of tuberculosis. It can not be expected to supersede collapse therapy and other surgical procedures when these are indicated.

Our knowledge of streptomycin is still in a state of flux. Its ultimate place in the treatment of some types of tuberculosis will be determined only after the extensive clinical investigation now under way is complete. Experience with this antibiotic agent has proved that tuberculosis is a disease amenable to antibacterial therapy and it is hoped that other usable agents will be forthcoming.

Streptomycin in Tuberculosis, H. Corwin Hinshaw, M. D., Marjorie M. Pyle, M. D., and William H. Feldman, D.V.M., The American Journal of Medicine, May, 1947.

Suggested Reading:

1. Rep. of Council of Phar. and Chem., J. A. M. A., Nov 8, 1947.
2. Am. Rev. Tuberc., Nov. and Dec., 1947. 21 articles.
3. North Carolina M. J., Nov., 1947, 3 articles.
4. Nat. Tuberc. A. Bull., Dec., 1947.
5. Ann. Int. Med., May, 1945.
6. Ann. Int. Med., Nov. and Dec., 1947.

—Arizona Tuberculosis Association
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Book Reviews

ADVANCES IN MILITARY MEDICINE, in Two Volumes. Edited by E. C. Andrus, D. W. Bronk, G. A. Carden, Jr., M. C. Winterntiz, J. S. Lockwood, J. T. Wearn, and C. S. Keefer. Published by Little, Brown and Company, 34 Beacon St., Boston, Mass. Price 2 Vols. $12.50.

The material in these two books is taken from activities of the Office of Scientific Research and Development. It covers medicine and surgery in all their phases during the years of the Second World War. It includes the history and gives an account of the experimental work in developing the various new drugs which were discovered and used. Chapters are devoted to penicillin, the new anti-malarial drugs, the tropical diseases, aviation medicine, blood substitutes, nutrition, chemical warfare, anti-pest agents and numerous other subjects. A ready reference covering full information on all these fields is preseented in such a way that it is not too technical for even the lay mind. And it is not without a rare bit of humor here and there. These volumes should be recommended to the public for interesting and instructive reading, as well as to the medical profession.

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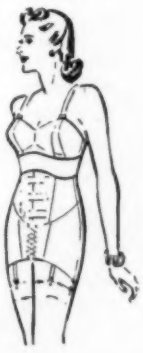
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Woman's Auxiliary



MRS. THOMAS BATE
President of the Auxiliary to the
Arizona State Medical Association

Mrs. Bate was born and brought up in Wyandotte, Michigan.

Graduated from the University of Arizona.

Did Social Service work in Tennessee Mountains two summers.

Taught in Grosse Point, Michigan school system seven years.

Married to a Phoenix Surgeon. Has two daughters, Deborah, 11 years, and Elizabeth, 5 years.

Active in County and State Auxiliary since 1939.

Member of first Red Cross course in canteen, war took her away from Phoenix nearly four years. Since her return has belonged to Red Cross Home Nursing committee.

REPORT OF WOMAN'S AUXILIARY TO THE ARIZONA MEDICAL ASSOCIATION'S FIFTY-SEVENTH ANNUAL MEETING

The Woman's Auxiliary to the state Medical Association held its fifty-seventh meeting in Phoenix at Hotel Westward Ho. Registrations were taken throughout the day, May 19, in the hotel lobby.

At seven P. M. the Executive Board meeting was called to order, Dinner meeting, in the Aluminum Room.

Thursday, May 20, at 10 A. M., Mrs. Harry T. Southworth presided at the General Sessions. Dr. Irvin E. Hendryson, Department of Orthopedics, University of Colorado School of Medicine, was the speaker, his topic being "Poliomyelitis Today."

The business session was held at 10:30 A. M. Report of meeting of Board of Directors, and reports of state officers and committee chairmen. Among reports were Revisions, Convention, Registration and Credentials.

Nominating and election of officers.

The National President stressed that we should be a well informed auxiliary; that we continue with our prime project of health education, Good Public Relations, to interpret medicine to lay groups, especially rural communities, and that State and County chairmen should pattern their program from National.

Luncheon was held in the Continental Room of Westward Ho at 12:30 P. M., honoring Mrs. Eustace A. Allen of Atlanta, Georgia. The retiring State Prsident, Mrs. Harry T. Southworth, introduce Mrs. Allen, Mrs. Thomas Bate, incoming State President; Mrs. Henry Running Maricopa County President; Mrs. Jesse Hamer of the National Board, and many other notable guests. Many past state presidents attended this convention.

The Presidents Dinner Dance was held at 7:30 P. M., dinner being served under the stars in the patio, dancing in the Fiesta Room from nine until midnight.

Friday, May 21st, the second session was held in the Saratoga Room at 10 A. M. Greetings by Mrs. E. Henry Running, a Memorial Service conducted by Mrs. James R. Moore and several moments of silent prayer followed. Mrs. N. K. Thomas called the Roll. Mrs. Clarence Gunter reported for Gila County, Mrs. Joseph Bank for Maricopa, Mrs. Charles Starn for Pima, and Mrs. E. B. Jolly, Yavapai. Mrs. Eustaec Allen, National President, installed the new State Officers. The members are to be commended for their fine work.

These reports should be an inspiration to incoming officers. The State President's inaugural address carries more details about the ensuing year's projects. The meeting adjourned at 12 noon so we might attend luncheon at the Silver Spur. Dr. W. U. Bauer, Chicago Director of Health Education, American Medical Association, talked briefly about a program to be set up so teachers will be more familiar with Health Education, such as better lighting in the schools, running water and lavatory facilities, well balanced and nutritious lunches, etc. From the luncheon the women were taken to view the scientific exhibits at the Shrine Auditorium.

At 7:30 P. M. Friday evening Doctor and Mrs. Dudley Fournier gave a cocktail party in their patio.

Respectfully submitted,
Mrs. Matthew Cohen.

INAUGURAL ADDRESS, MAY 21, 1948

As an auxiliary organization to the Arizona State Medical Association we should asume our share of responsibility for safeguarding the ideals and principles of American medicine at all times. Ours is a continuous obligation to serve in the interest of health. It involves the education of the lay woman as well as the doctor's wife in those endeavors that make for a better health environment and a better community.

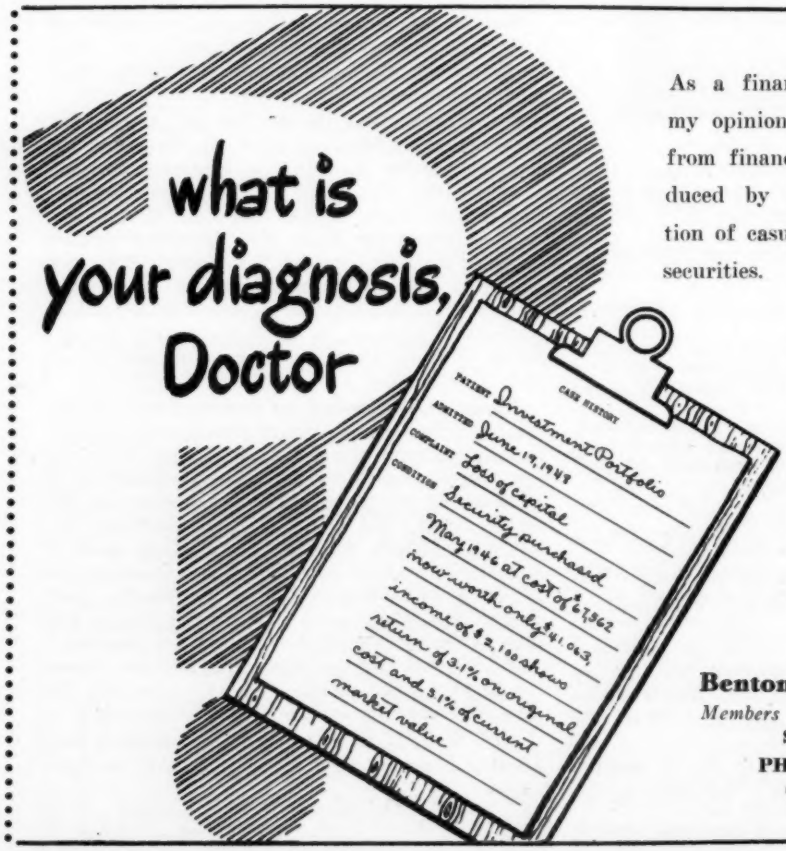
The incoming officers and chairmen of the standing committees should assume their responsibilities, as have their predecessors, with full realization of this obligation. With the membership rests the responsibility for promoting such plans as are presented by the various departments, particularly public relations, program, legislation and organization and Hygeia.

The need for a strong public relations program in Arizona is urgent. This year as a community service we plan to conduct Health Forums in each of the organized counties. To these Forums will be invited the president and one representative of each organization in the city. The speakers will be qualified doctors presenting interesting medical subjects in a layman's terminology. This is to be our contribution as doctors' wives to our community, and we must make the people realize we have no ulterior motive in presenting such a program.

Through the Health Chairman we will continue the plan begun this past year of sponsoring an essay contest in all high schools of the state on Tuberculosis. Prizes will be given by the Arizona State Medical Association and the four organized county auxiliaries.

In the spring it is hoped that each auxiliary will sponsor a scholarship for one nurse in their own city. Four nurses being educated by medical auxiliaries in our state would add to our record of community service.

The importance of educational programs in county auxiliaries can not be too strongly em-



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phasized. Programs throughout the year should include all phases of Auxiliary work and thus insure a well informed membership. A school of instruction for state officers and chairmen will be held early this fall. It is highly recommended by the National that both State and County Auxiliaries conduct such schools.

Dr. Edward L. Bortz, President of the American Medical Association, urges that all doctors' wives become familiar with the ideals and objectives of A.M.A. An informed doctor's wife is an asset to her community. Be sure you are informed on all current medical issues before you speak as a doctor's wife. Another recommendation made by a past president is that every doctor's wife study and read the By-laws, Constitution, and Principles of Ethics of the A.M.A.

With the help and cooperation of all members and officers this nineteenth year of Auxiliary work in Arizona should be most successful.

Mrs. Thomas Bate, President,
Auxiliary to the Arizona State
Medical Association.

REPORT OF THE WOMAN'S AUXILIARY to the HOUSE OF DELEGATES ARIZONA STATE MEDICAL ASSOCIATION

This is the first time a President has been asked to report to the House of Delegates of the Arizona Medical Association. In view of the fact that the membership might be interested in reading this, we are publishing it as follows:

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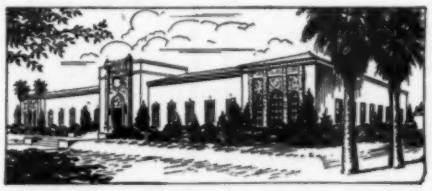
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As President of the Woman's Auxiliary to the Arizona State Medical Association, I wish to extend greetings and best wishes to all the members of the House of Delegates.

One of the most important events which has occurred during the Auxiliary year was the meeting of a committee from the Council with a similar committee from the Auxiliary. This meeting afforded both organizations a chance to discuss matters of mutual importance and the Auxiliary an opportunity to obtain the advice and consent of the Medical Association on projects it wishes to undertake.

Organization: The current membership of the Auxiliary is 308, an increase of six members over the preceding year. Four counties are organized: Gila, Maricopa, Pima and Yavapai. There are forty-one members-at-large.

Program: Programs have been interesting and varied, designed to stimulate regular attendance at county meetings. Always present was the desire to further friendly relations among doctors' families and between the Auxiliary and other organizations. Speakers from the Medical profession and Tuberculosis Society have high-lighted this year's program. Health education and the projects of the Woman's Auxiliary have been stressed.

Public Relations and Health: Through the efforts of the Auxiliary, speakers from local medical societies appeared on health education programs of women's organizations and the Parent-Teacher Association. The urgent need for student nurses and the opportunities offered those who prepare for this profession has been stressed among girls in the high schools. There has been constantly present that desire to bring about better understanding between the medical profession and the public. Doctors' wives have continued to work on health committees in other organizations. Plans are underway to sponsor an essay contest among Senior High School students, the subject to be "Tuberculosis."

Philanthropic: The Auxiliary has given generously in time and money to the following: March of Dimes, Red Cross, Community Chest, Bonds for Children's Colony, Crippled Children, Hospital Drives, Cancer Research and Christmas Seals. New clothing and bedding for the needy were collected and distributed in one community. All counties helped to collect food, clothing and toys for Christmas distribution.

Legislation: Members have been kept well informed on medical legislation. With the approval of the Medical Society, the legislative chairman sent requests to all organized counties to get behind three bills to be introduced in the Legislature. Legislators of the districts were contacted personally or by letter to aid in the passage of these bills.

Hygeia: Hygeia has been placed in schools and different children's hospitals. This year many dentists for the first time subscribed to Hygeia through the auxiliary members. The number of new subscribers is increasing.

Bulletin: The importance of the Bulletin to each Auxiliary member is an established fact. There is no better way of being well informed about Auxiliary plans and policies. All members-at-large were contacted and the response was gratifying. One county auxiliary subscribed one hundred per cent.

Press and Publicity: Local and state news have been given good press notice throughout the state and in "Arizona Medicine."

Post-War Planning: Pre-payment Medical Care Plans were studied and discussed. One county was responsible for presenting programs to two other organizations explaining the Blue Shield and the Blue Cross.

History: Through the untiring efforts of the historian, the Auxiliary records are complete.

Arizona is most fortunate to have Mrs. Jesse D. Hamer, Director of the National Auxiliary and National Historian, as a member of our Auxiliary. She is ever a source of inspiration to every member.

Visiting county auxiliaries is one of the chief duties of the state president. All counties, with the exception of one, were visited. Last year and again this year, the President-elect attended the National Conference of State Presidents and presidents-elect in Chicago. There have been three state board meetings, held in Tucson, Prescott and Phoenix.

During the joint session of committees from the Auxiliary and the Council, the Auxiliary asked that the Arizona State Medical Association consider the following: (1) include in its budget each year a certain amount of money to augment the Auxiliary budget so that some of the expenses of the president and president-elect might be paid; or (2) revamp the Arizona State Medical dues to include an additional sum to cover the state and national dues of Auxiliary members. If this plan were accepted, the wife of every member of the Association would automatically become a member of the Auxiliary, thus giving us a one hundred per cent membership. Under the present plan, many of the wives are not members. It is felt that such a plan would not only strengthen the Auxiliary in number, but would also be an incentive to be active in Auxiliary work.

There are many states that have adopted these plans. Mentioning only a few, the western states are Oregon, Washington, Montana and Utah. I recommend that serious consideration be given to the adoption of one of these on a similar plan.

We, who joined the medical profession by way of marriage, thus giving us the privilege of belonging to the Woman's Auxiliary, recognize our responsibilities as doctors' wives, always striving to be of help to our doctors and to be valuable citizens.

Respectfully submitted,
Mrs. Harry T. Southworth.



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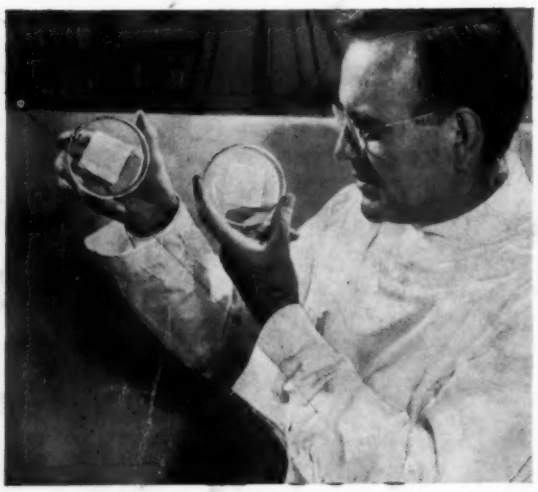
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